



**IMPACT OF ALTERNATIVE MEDICARE
FEE SCHEDULES ON PHYSICIANS**

Final Report

PB 90-225855





**CENTER FOR HEALTH
ECONOMICS RESEARCH**

Hillsite Office Building
75 Second Avenue, Suite 100
Needham, MA 02194
(617) 444-8910

54

**IMPACT OF ALTERNATIVE MEDICARE
FEE SCHEDULES ON PHYSICIANS**

Final Report

PB 90- 225855

by:

Janet B. Mitchell, Ph.D.

The Center for Health Economics Research
75 Second Avenue, Suite 100
Needham, MA 02194

October 1989

This research was supported under Grant No. 17-C-98999/1 from the Health Care Financing Administration. The views and opinions in this paper are the author's and no endorsement by HCFA or DHHS is intended or should be inferred.



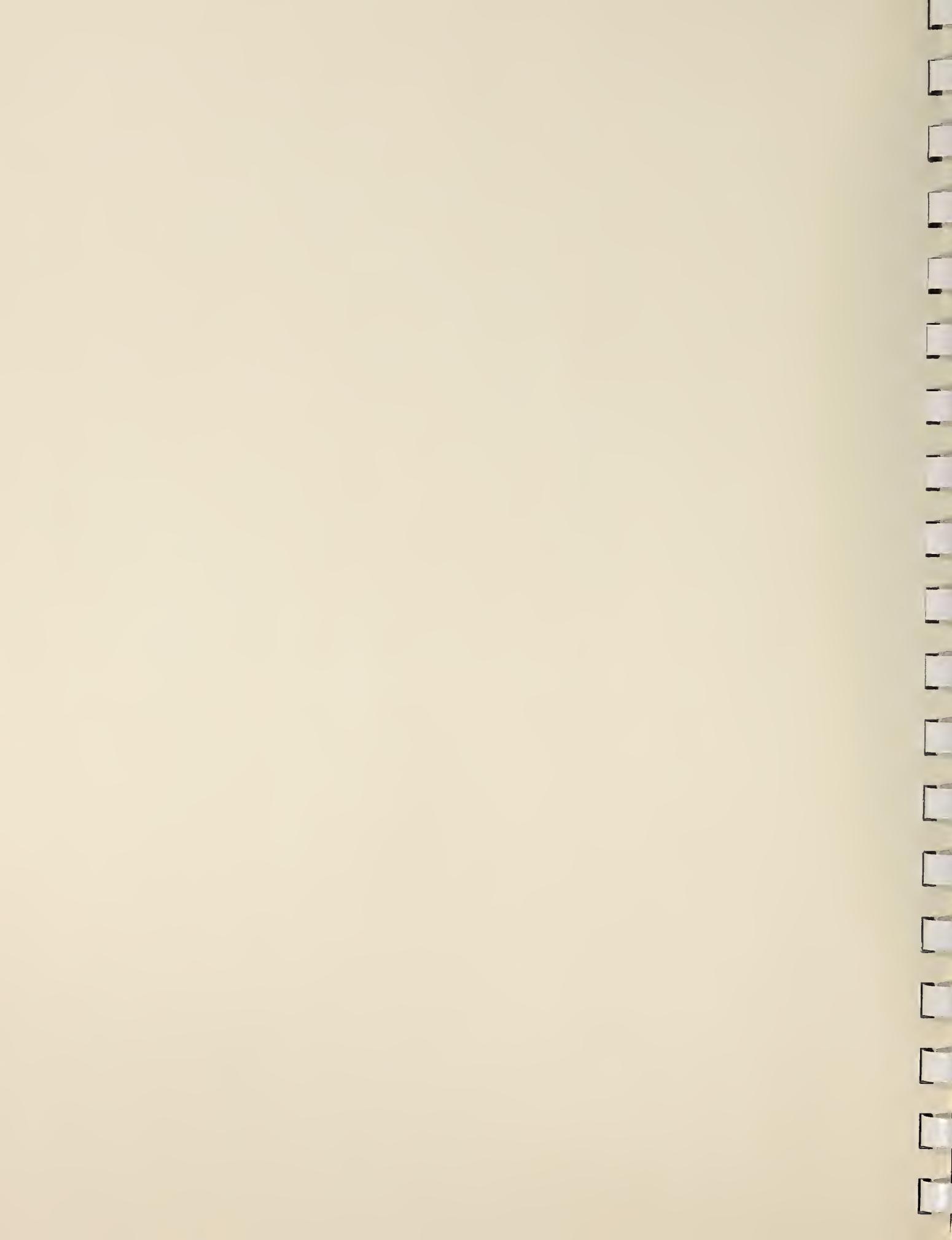


TABLE OF CONTENTS

	<u>PAGE</u>
IMPACT OF ALTERNATIVE MEDICARE FEE SCHEDULES ON PHYSICIANS	1
METHODOLOGICAL APPENDIX	A-1
APPENDIX TABLES	B-1

**IMPACT OF ALTERNATIVE MEDICARE
FEE SCHEDULES ON PHYSICIANS**

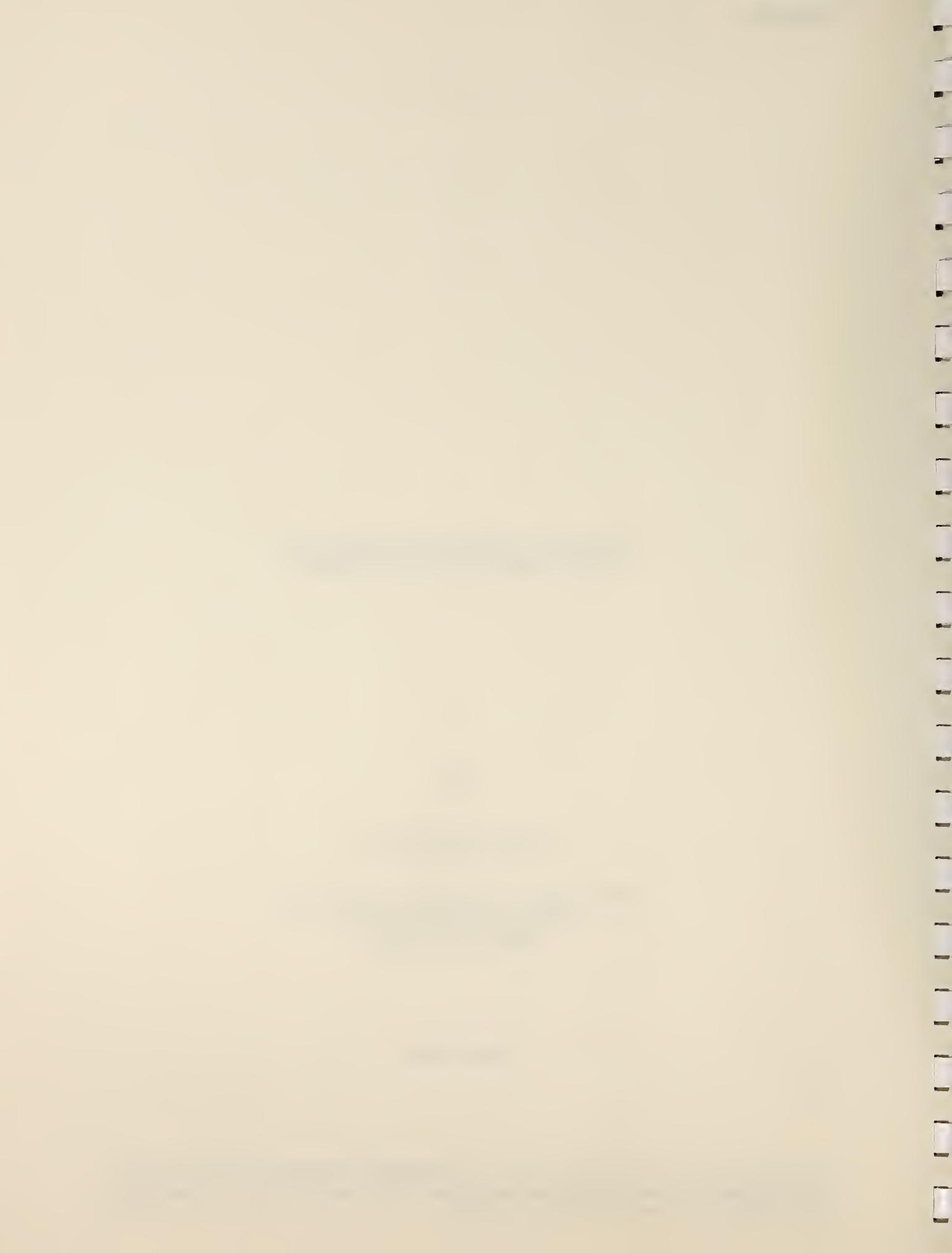
by:

Janet B. Mitchell, Ph.D.

The Center for Health Economics Research
75 Second Avenue, Suite 100
Needham, MA 02194

October 1989

This research was supported under Grant No. 17-C-98999/1 from the Health Care Financing Administration. The views and opinions in this paper are the author's and no endorsement by HCFA or DHHS is intended or should be inferred.

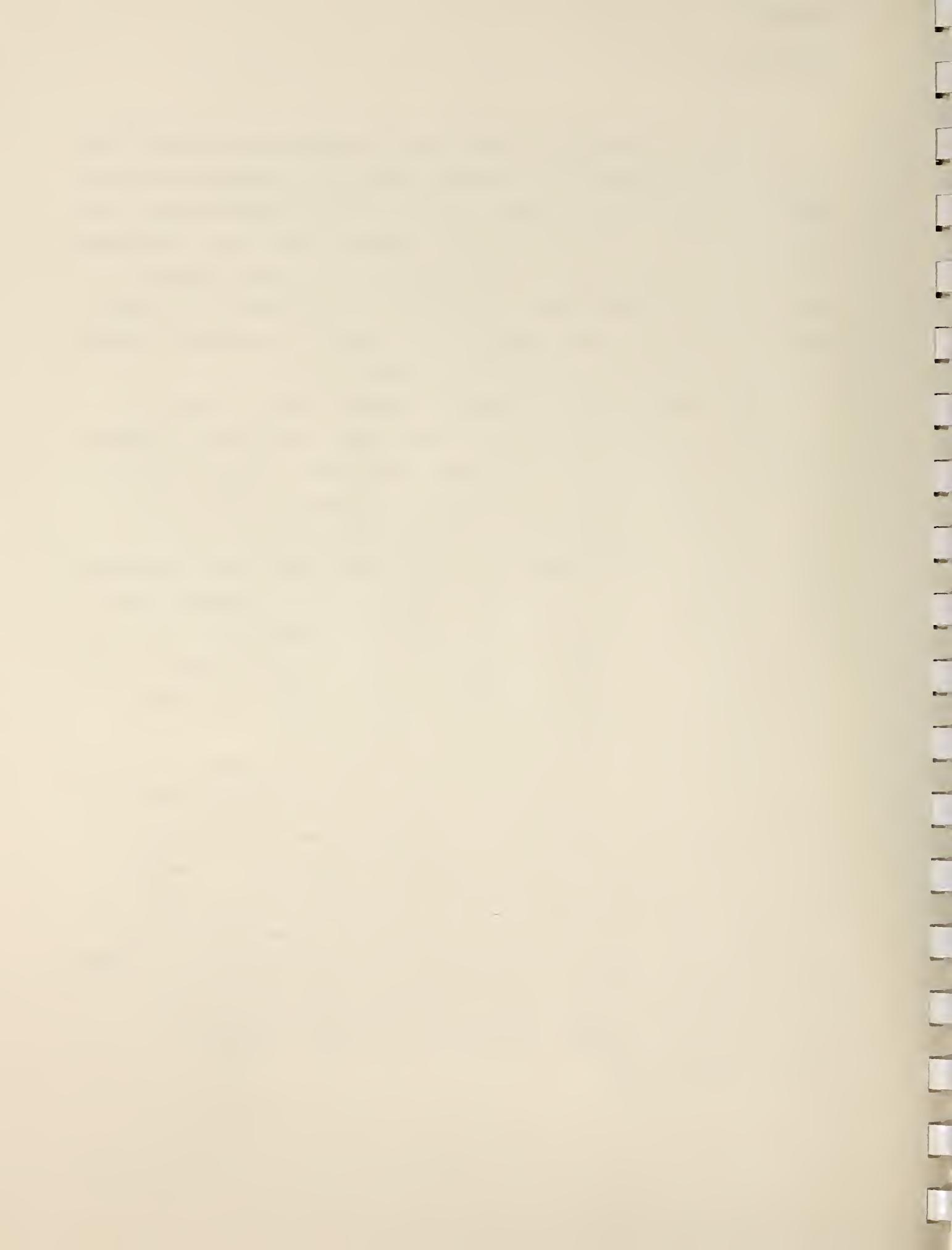


INTRODUCTION

The "usual, customary, and reasonable" (UCR) methodology that Medicare and many Blue Shield plans use to determine physician reimbursement has been under fire for years on the grounds that it is highly inflationary (see, for example, OTA, 1986). Because next year's payment is based on what was charged this year and in previous years, physicians have had a strong incentive to continually increase their fees. Furthermore, the method used to calculate how much insurers will actually pay for a given service provided by a specific physician is confusing to physicians and patients alike.

At the same time, many policymakers have felt that the current fee structure is seriously distorted, and in particular that Medicare "overpays" for surgical procedures (see, for example, PPRC, 1988). Congress mandated that the Department of Health and Human Services conduct a study of the "resource costs" associated with providing physician services. This, of course, was the Resource-Based Relative Value Scale (RBRVS) Study completed in 1988 (Hsiao *et al.*, 1988). This study suggested that many operations were paid too much, given the physician time and effort involved, while visits were reimbursed too little. Based on these findings, the Physician Payment Review Commission (PPRC) formally recommended that Medicare adopt a fee schedule based on the RBRVS, with some modifications (PPRC, 1989).

The advantage to a fee schedule is that similar physicians providing the same service are paid the same amounts. The fee schedules can be published, so that both physicians and patients know ahead of time how much Medicare is willing to pay. Any fee schedule consists of two components: a relative value scale that determines how much each service should be paid relative to each other, and a conversion factor, that transforms those relative values into dollars. The Commission recommended that a modified version of the RBRVS be used as the relative value scale, and that the conversion factor be budget-neutral but include an adjustment for geographic differences in physician practice costs.



Both the relative value and the conversion factor will have important redistributive effects on physician revenues. Simulations reported by the PPRC show Medicare revenue losses for surgeons and for physicians practising in very large metropolitan areas, with gains for medical specialists and physicians in rural areas. From the PPRC simulations, however, we can not tell how much of the redistributive effect is due to the RBRVS, and how much is due to the geographic practice cost adjustment. Some amount of redistribution, furthermore, is simply due to the substitution of fixed fees for the variable charges allowed under the UCR methodology.

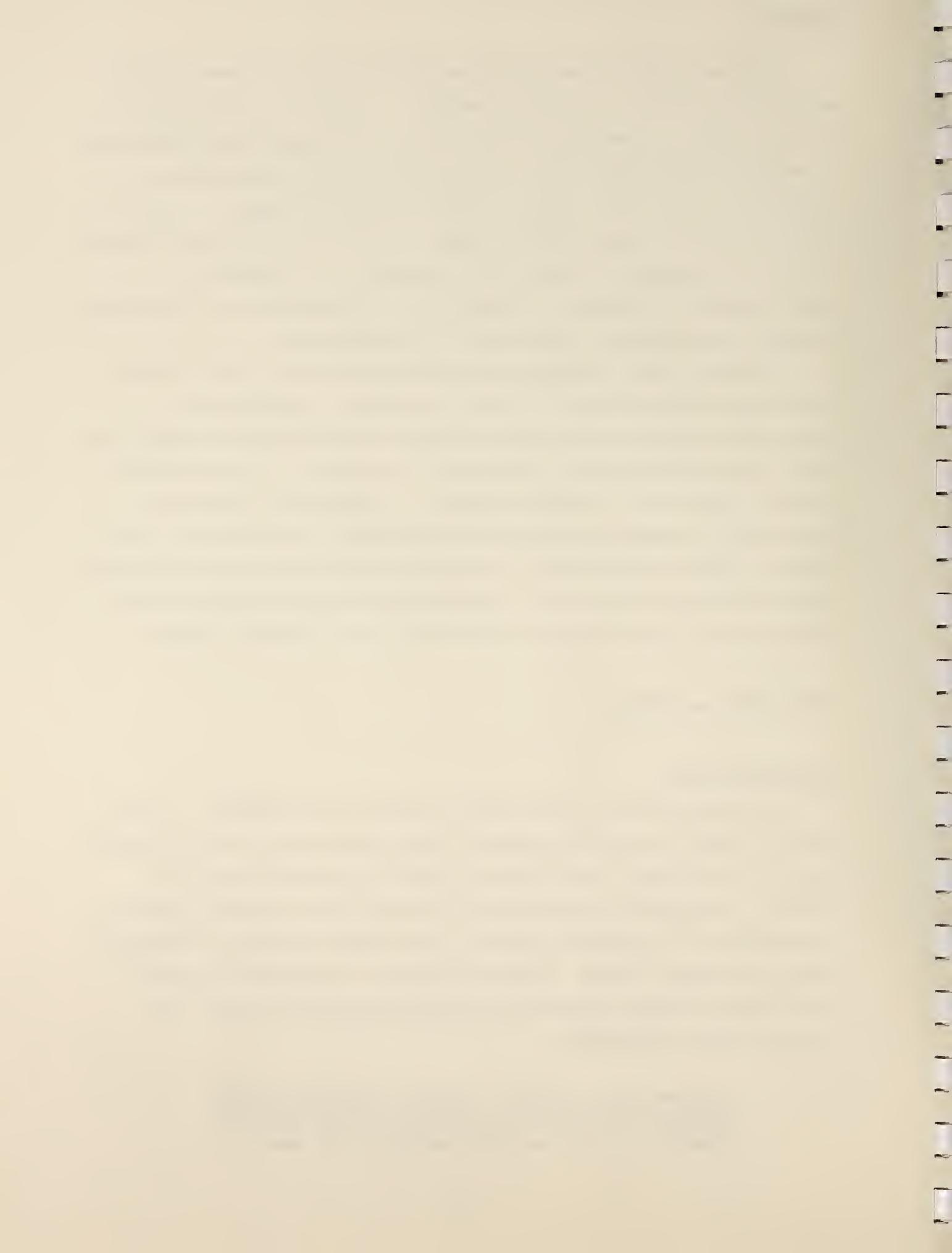
This paper seeks to examine the independent effects of the relative value scale and the conversion factor. To do this, we calculate a charge-based relative value scale and compare its redistributive effect with that of the RBRVS developed by Hsiao and his colleagues. By calculating a conversion factor that is budget neutral at the area level, without any adjustment for geographic practice cost differences, we can derive a "pure" estimate of RBRVS impacts alone. We then calculate a conversion factor that does adjust for practice costs. In combination with the charge-based RVS, this gives us a "pure" measure of the practice cost adjustment impacts.

STUDY DESIGN AND METHODS

Simulation Methods

The construction of a fee schedule involves two components: (1) the relative values, or weights, assigned to each service; and (2) the conversion factor, or multiplier, that is used to express the relative values in dollars. In this paper, we simulated the impact of four different types of fee schedules: two different relative value scales, each with two different kinds of conversion scales. These were chosen to illustrate the range in redistributive effects associated with alternative policy options. The relative scales consisted of:

- (1) a charge-based relative value scale, based on national average allowed charges. Specialty differentials were included for visits and consultations only. Thus, the relative value for any given service is the same



regardless of the specialty performing it, except in the case of visits and consults, where the values are specialty-specific.

- (2) the work values from the resource-based relative value scale developed by Hsiao and his colleagues (1988). These values attempt to measure the relative time and intensity of various physician services. We excluded the opportunity cost of training and practice cost indices which have been severely criticized by the PPRC (1989) and others.

We calculated two different types of conversion factors:

- (1) budget neutral at the reasonable charge locality level, intended to provide a "pure" measure of RVS impacts alone; and
- (2) based on the Geographic Practice Cost Index, intended to take into account geographic variation in physician practice costs.

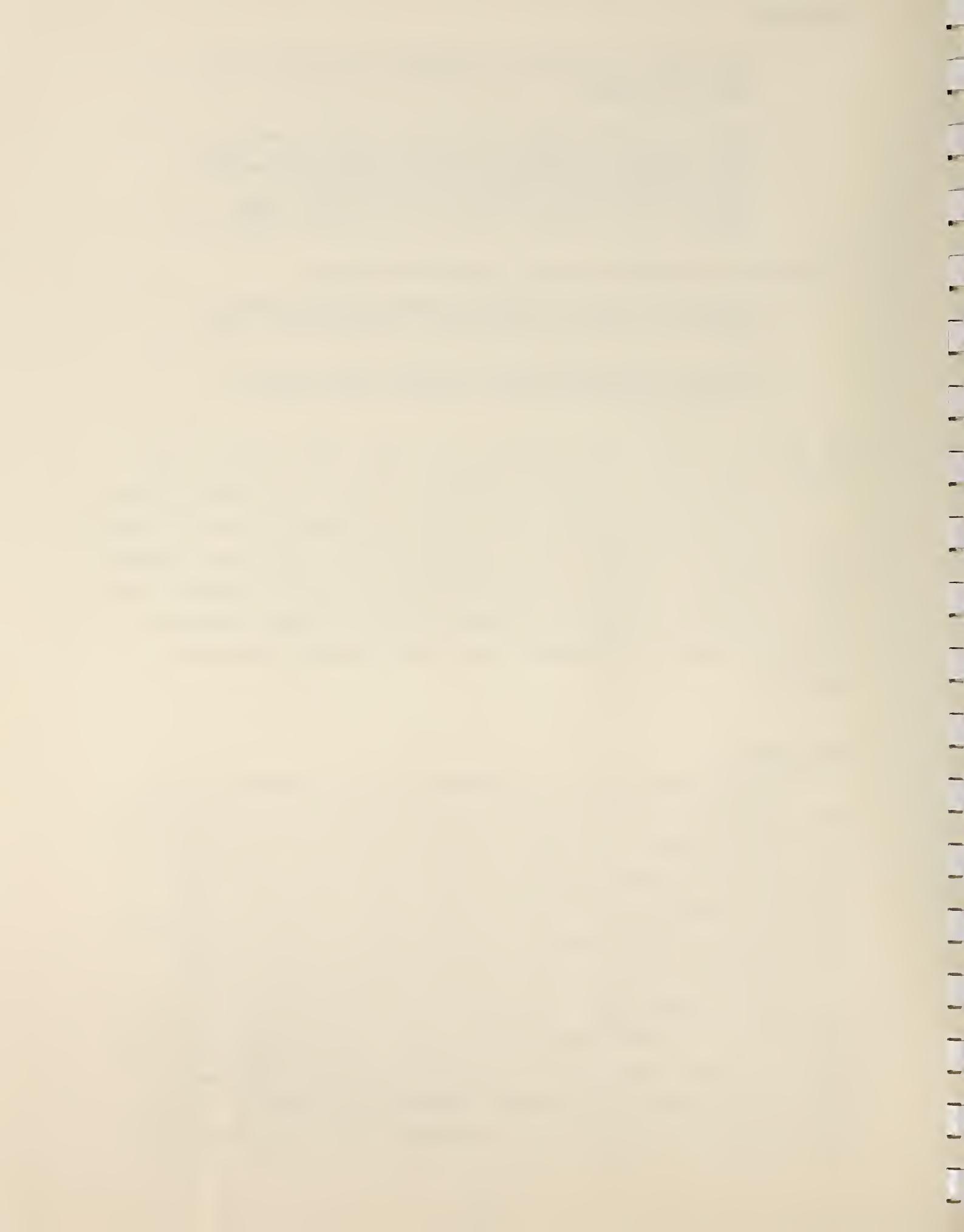
Both conversion factors were calculated so as to be budget neutral at the national level, that is, so that total Medicare outlays will remain unchanged.

The actual simulation was simply a matter of summing the relative values for a practice and multiplying by the appropriate conversion factor to obtain simulated Medicare revenues. Because simulated revenues will depend in large part on the size of the practice's Medicare caseload to begin with, most analyses were based on the percent gain or loss associated with the fee schedule.

Data Sources

The primary data base for the simulations was the 1986 BMAD provider file, which includes all Medicare Part B claims submitted by (or on behalf of) a five percent sample of providers. Because the practice is the sampling unit (rather than the individual physician), a solo physician has the same probability of being selected as a 50-person group practice. We adjusted for this, by weighting each practice by its total Medicare allowed charges.

The simulations were based on all physician specialties, with the exception of anesthesiology. This specialty was excluded for two reasons. First, Medicare currently pays anesthesiologists very differently from other physicians (taking time as well as procedure into account, for example), making the calculation of charge-based relative values difficult. Second, a substantial portion of anesthesia reimbursement is for the supervision of



CRNAs; since the Resource-Based RVS assumes that the anesthesiologist personally performs all services, comparisons of simulated and actual payments would be biased.

The final sample size is shown in Table 1. The first column represents the actual number of practices, overall and by specialty, included in the simulations. The second column is a frequency distribution that has been weighted by each specialty's total allowed charges.

The charge-based relative value scale was obtained from the Office of Research, HCFA. The work components of the Resource-Based Relative Value Scale were available from the National Technical Information Service (NTIS). Neither set of scales had relative values for assistant surgery. We calculated assistant surgery values as 20 percent of the relative value for the full procedure, following the payment rule adopted by most carriers.

The Geographic Practice Cost Index is a standard Laspeyres index that compares the cost of purchasing an identical market basket of physician practice inputs in different areas (MSAs and state-specific rural areas). Practice inputs include such things as office rent, nursing wages, malpractice premiums, as well as the physician's own time. A complete description can be found in Pope *et al.*, (1989) and in Zuckerman *et al.*, (in press). The PPRC has argued that physician time should not be included in the index, on the grounds that net (of nonphysician practice expenses) compensation should be equal for all physicians regardless of geographic location. However, the authors of the Geographic Practice Cost Index argue persuasively that physicians should be compensated at the same real rate across the nation, that is, by including an adjustment for physician time costs to account for differences in the cost-of-living and residential amenities.

Updating Medicare Allowed Charges to 1988

Since 1986, Congress has made a number of changes in the relative prices paid for physicians' services, both by type of service and by the participation status of the physician. The objective of these changes has been to reduce the payment differential between primary care and surgical procedures (especially those regarded as particularly "overpaid") and to widen

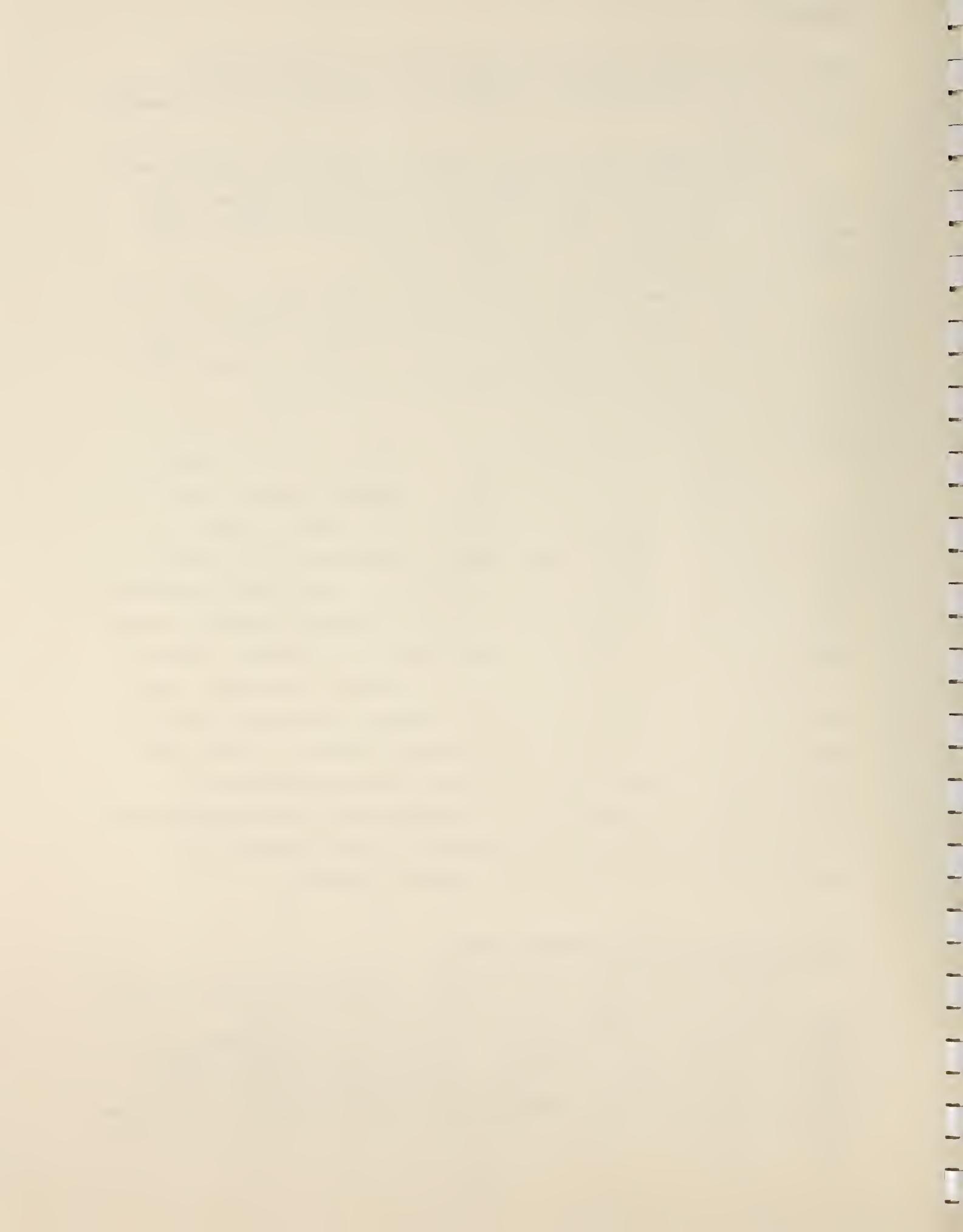
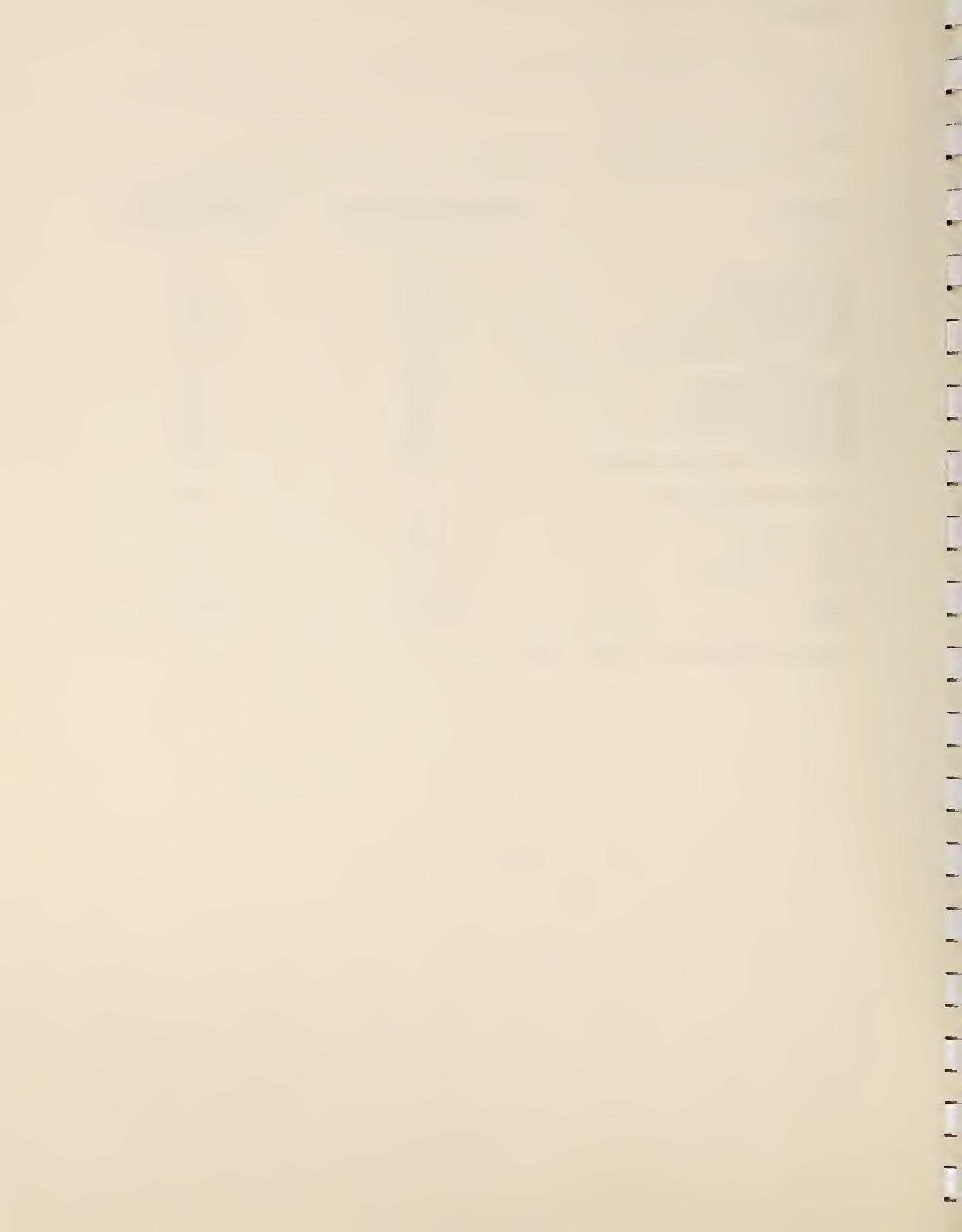


TABLE 1

SAMPLE SIZES BY SPECIALTY

<u>Specialty</u>	<u>Number of Practices</u>	<u>Percent of Part B Physician Spending</u>
GPs/FPs	3,453	9.0%
Cardiologists	558	7.5
Dermatologists	298	1.7
Gastroenterologists	175	2.3
Internists	2,889	18.7
Other Medical Specialists	516	2.6
General Surgeons	1,181	7.6
Ophthalmologists	701	13.5
Orthopedic Surgeons	620	4.6
Thoracic Surgeons	169	3.0
Urologists	356	3.3
Other Surgical Specialists	1,652	3.3
Multi-Specialty Groups	560	8.8
Radiologists	604	8.5
Other Specialists	1,929	5.6
Total	15,661	100.0%

Source: BMAD Provider File, 1986.



the differential between participating and nonparticipating physicians. Failure to incorporate these reimbursement changes in the simulation methodology would exaggerate the redistributive effects of a resource cost-based RVS. Therefore, we decided to "update" our 1986 allowed charges to 1988, taking these changes into account. A detailed description of the methodology used is provided in the appendix.

RESULTS

Redistributive Effects by Specialty

Simulated impacts by specialty, defined as the percent change in Medicare practice revenues, are presented in Table 2. (All practices have been weighted by their total allowed charges.) Columns 1 and 2 present results for the two fee schedules based on a charge-based RVS: first with a conversion factor that is budget neutral at the reasonable charge locality level and then with a conversion factor adjusted for geographic practice cost differences. The next two columns present similar findings for fee schedules based on the work values of the RBRVS.

The redistributive effects of a charge-based RVS appear relatively small. Many specialties would be unaffected on average, such as internal medicine and general surgery, for example. Dermatologists, on the other hand, would enjoy considerable gains in their Medicare revenues, primarily because of increased payments for surgical procedures such as removal of skin lesions. These procedures are also commonly performed by general and plastic surgeons whose fees are generally higher than those charged by dermatologists. Since the relative values for these procedures are a weighted average of all specialists' charges, the resulting value will be higher than one based on dermatologists' charges alone. Similarly, gastroenterologists' revenues would fall because many of their procedures are also provided by specialists with lower charges, e.g., colonoscopies performed by internists.

By contrast, a fee schedule based on a resource-based RVS would have profound redistributive effects across specialties. General and family practitioners (GPs/FPs) and internists in particular would enjoy large

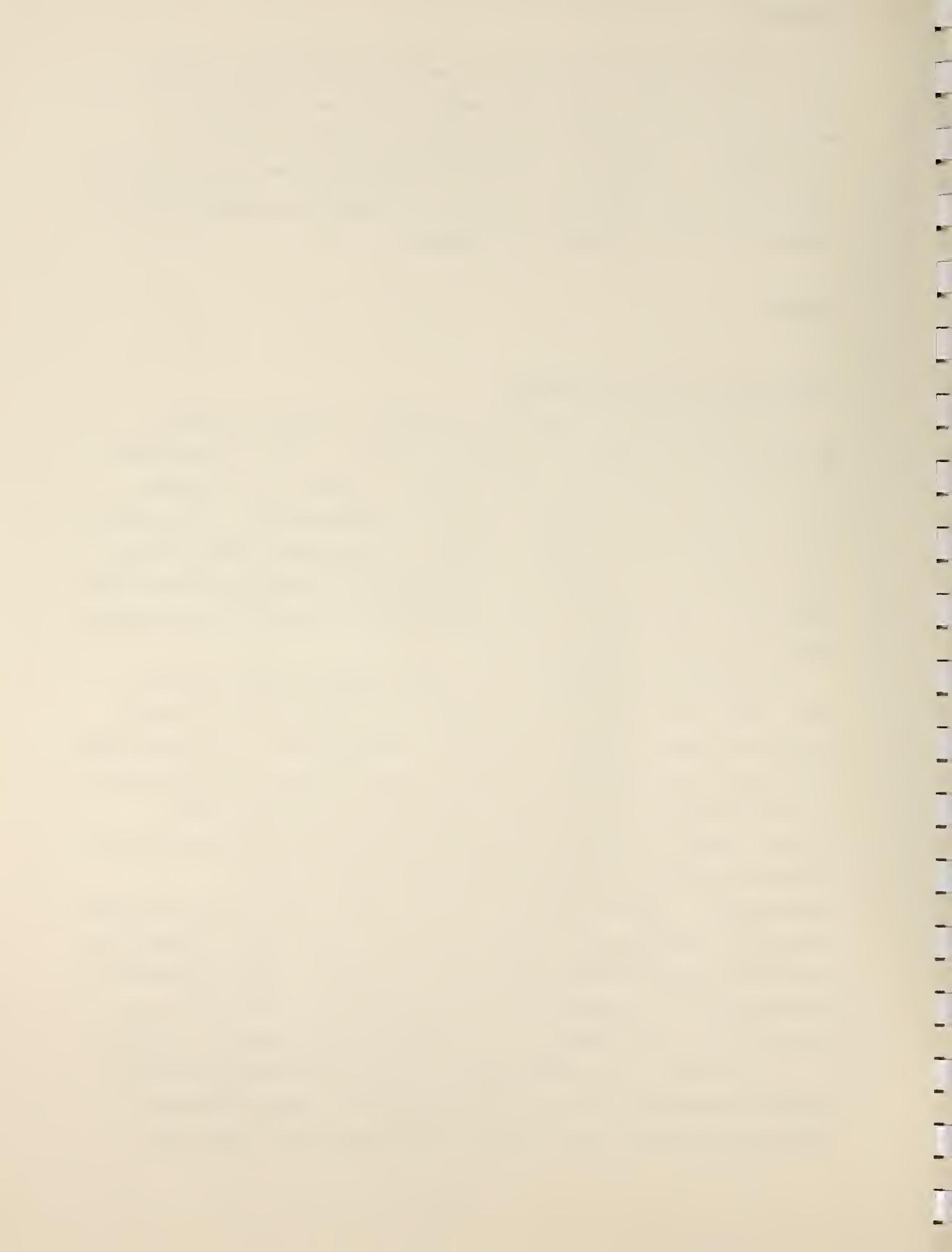


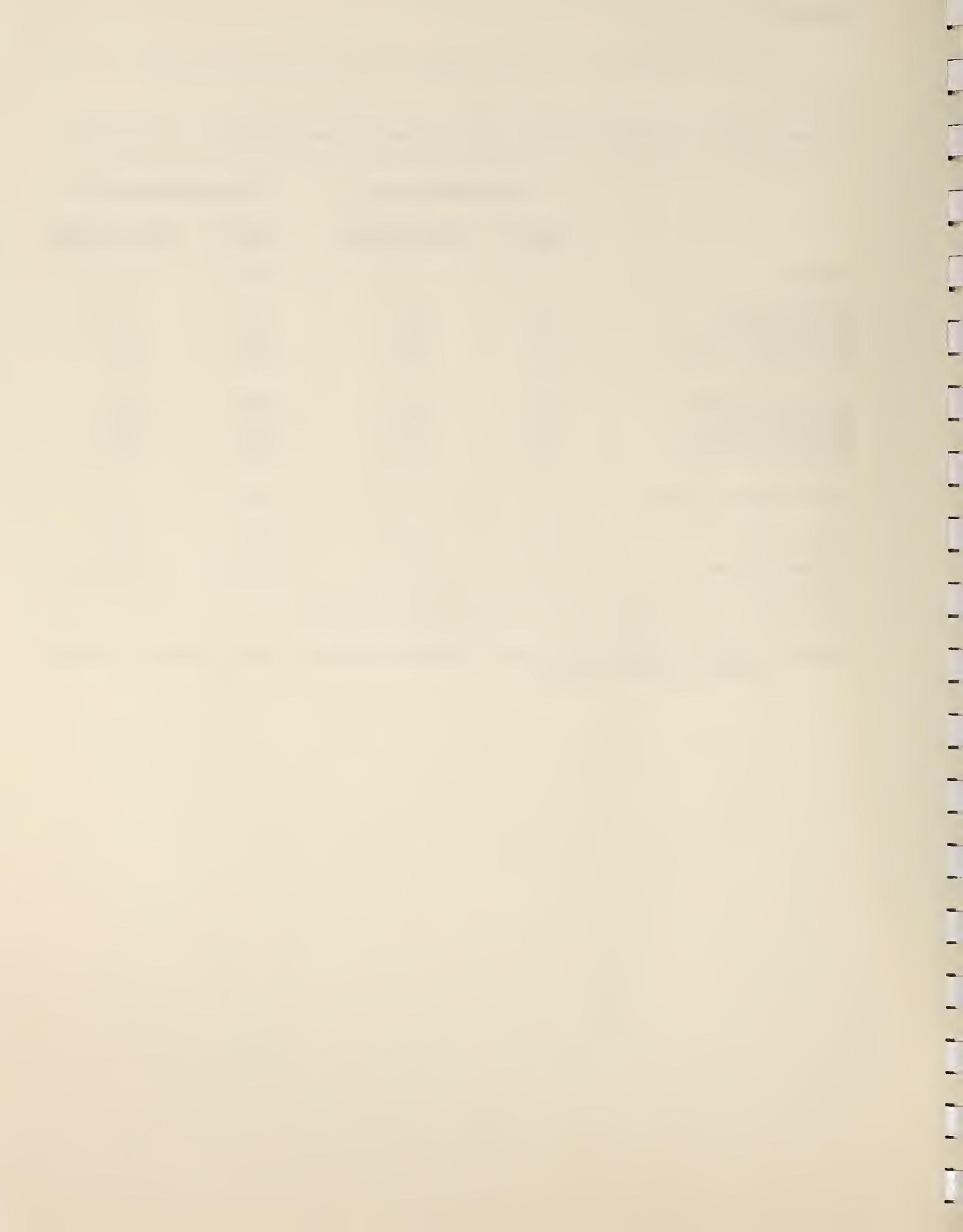
TABLE 2

PERCENT CHANGE IN MEDICARE REVENUES UNDER ALTERNATIVE FEE SCHEDULES: BY SPECIALTY

	<u>CHARGE-BASED RVS</u>		<u>RESOURCE BASED RVS</u>	
	<u>Locality Neutral</u>	<u>With Practice Cost Adjustment</u>	<u>Locality Neutral</u>	<u>With Practice Cost Adjustment</u>
GPs/FPs	-4.8%	-4.7%	46.3%	55.4%
Cardiologists	0.3	-2.3	3.1	3.8
Dermatologists	16.2	15.7	8.0	7.9
Gastroenterologists	-5.7	-8.1	-14.0	-13.7
Internists	-1.5	-0.9	25.9	30.7
General Surgeons	-0.2	1.0	-16.8	-14.4
Ophthalmologists	-2.2	-2.3	-35.6	-38.2
Orthopedic Surgeons	0.4	-0.5	-20.7	-20.4
Thoracic Surgeons	1.4	0.9	-45.8	-48.1
Urologists	-1.6	-2.1	-7.6	-6.9
Multi-Specialty Groups	1.4	1.8	-5.2	-5.0
Radiologists	-2.6	-2.0	-33.1	-32.6
All Physicians ^a	0.0	0.0	0.0	0.0

^aIncludes all specialties, not just those shown in table.

Source: BMAD 1986 Provider File, with revenues updated to 1988 taking into account Medicare payment changes.



windfall gains; when the fee schedule includes a practice cost adjustment, for example, GPs and FPs would see an increase of more than 50 percent in their Medicare revenues. Surgical specialists and radiologists, on the other hand, would suffer substantial losses in their Medicare earnings. These gains and losses are consistent with what we know about relative reimbursement changes under a resource-based RVS; payment for visits would rise while payments for most surgery and many tests would fall (see, for example, Hsiao *et al.*, 1988). Little is known, however, about how gains and losses on individual procedures contribute to a net gain or loss for the practice as a whole; we examine this directly in the following section.

The type of relative value scale used appears to be far more important in determining redistributive effects across specialties than does the choice of conversion factor. Within a given RVS, the gains and losses are relatively unaffected by the type of conversion factor used. Specialties who are disproportionately located in rural areas, such as GPs and FPs, would be somewhat better off when the conversion factor adjusts for geographic practice costs.

Redistributive Effects by Location

The opposite is true when we look at redistributive effects by geographic location (Table 3); here, the choice of conversion factor plays a far more important role than the RVS. Physicians practising in rural areas would achieve small gains when a geographic practice cost adjustment is used, while those in urban areas are unaffected on average.*

*Because the BMAD provider file includes only the reasonable charge locality of the practice, rather than more precise location information like the county, it was not possible to use standard definitions of urban and rural areas. We defined urban areas as those localities in which at least 75 percent of the population lived in MSAs. About three-quarters of the sampled physician practices (weighted by allowed charges) were classified as urban, using this definition.

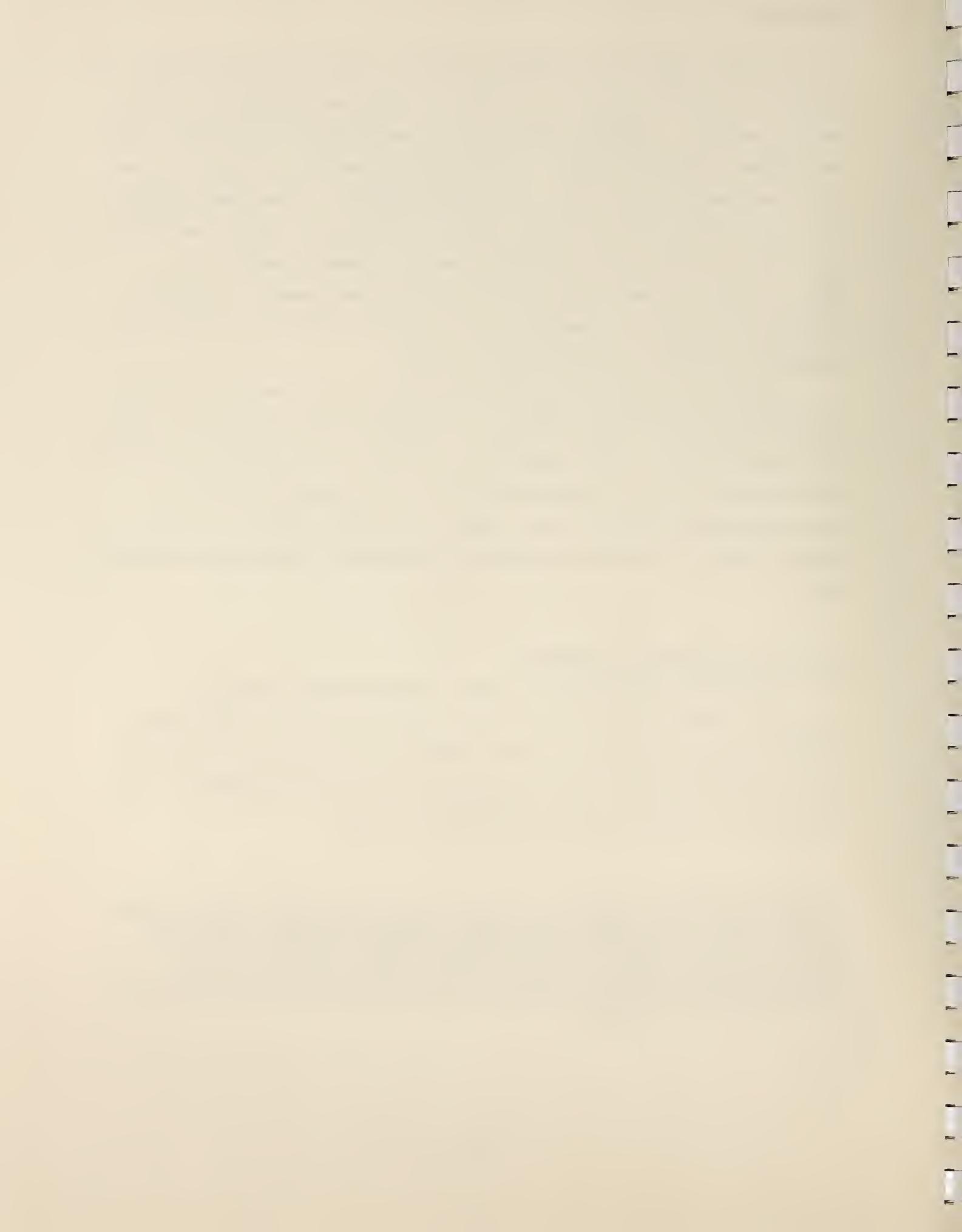
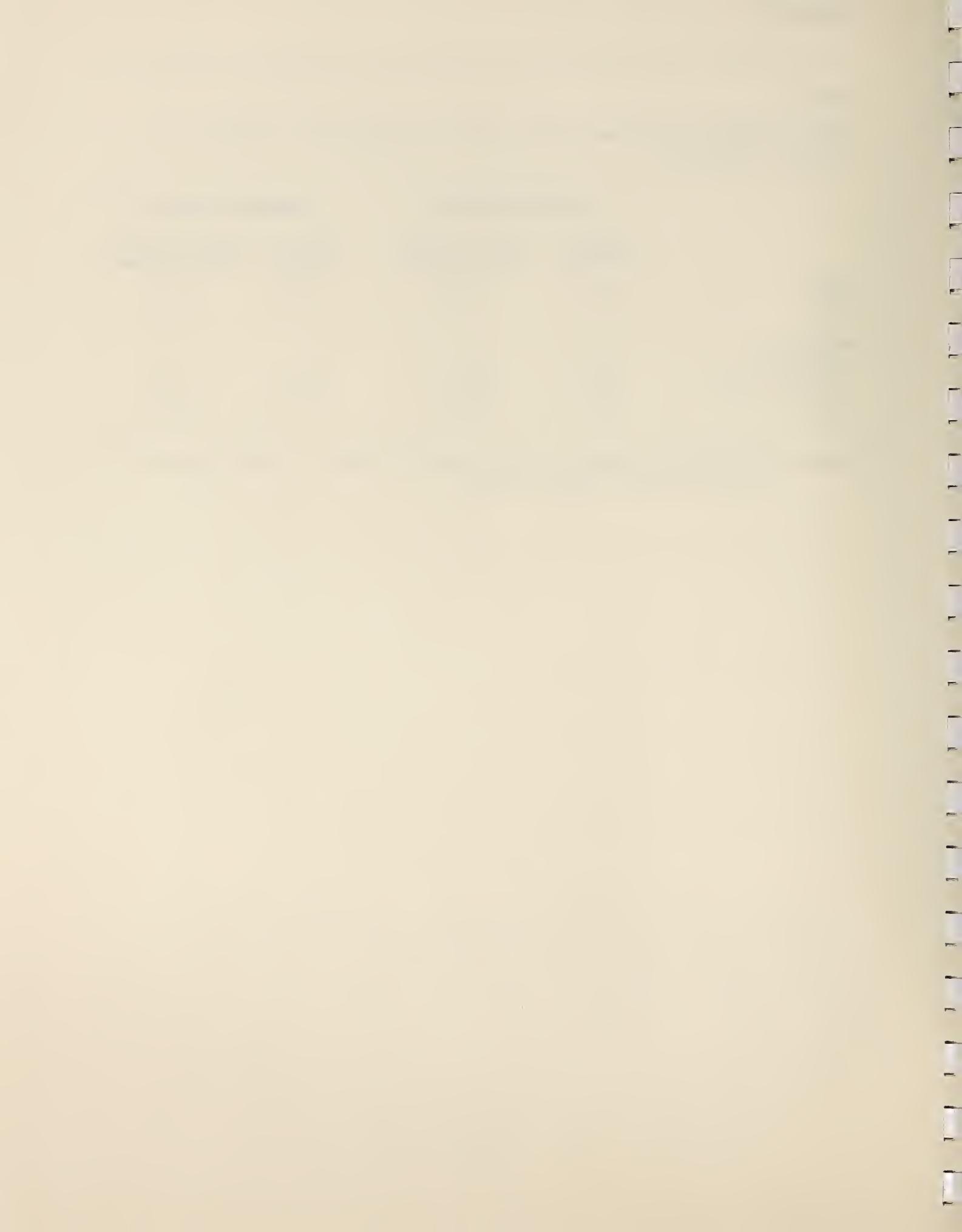


TABLE 3

PERCENT CHANGES IN MEDICARE REVENUES UNDER ALTERNATIVE FEE SCHEDULES: BY GEOGRAPHIC LOCATION

	<u>CHARGE-BASED RVS</u>		<u>RESOURCE BASED RVS</u>	
	Locality <u>Neutral</u>	With Practice <u>Cost Adjustment</u>	Locality <u>Neutral</u>	With Practice <u>Cost Adjustment</u>
Urban	0.0%	-0.6%	0.0%	-0.8%
Rural	0.0	1.8	0.0	2.6
Region:				
North East	0.0	-2.9	0.0	0.7
North Central	0.0	10.4	0.0	9.5
South	0.0	-2.3	0.0	-3.8
West	0.0	-2.6	0.0	-4.8

Source: BMAD 1986 Provider File, with revenues updated to 1988 taking into account Medicare payment changes.



Physicians practising in the North Central region of the country clearly would benefit from a geographic practice cost adjustment, at the expense of physicians elsewhere, particularly those in the South and West. Simulated average net revenue declines in the South were somewhat surprising, given the low fees of many Southern states. However, while Medicare fees in the South are below the national average, they are not low relative to the costs of practising in the South (see Pope *et al.*, 1989).

Distribution of Gains and Losses

Average percent changes in Medicare revenues may obscure substantial redistributive effects within specialty. We classified practices into five groups: (1) big winners, practices enjoying gains of 30 percent or more over current Medicare revenues; (2) small winners, practices with gains of 10 percent or more but less than 30 percent; (3) "no change" practices, those with gains or losses smaller than 10 percent; (4) small losers, practices that would lose at least 10 percent of their current revenues but less than 30 percent; and (5) big losers, those with losses of 30 percent or more.

Table 4 presents a frequency distribution of physician practices across these categories for each of the four alternative fee schedules. The distribution of winners and losers under a charge-based RVS is fairly normally distributed with roughly one-half of practices falling into the "no change" group. General and family practitioners were disproportionately represented among the "big losers", while the "big winners" included relatively more dermatologists.

By contrast, the distribution of practices under a resource-based RVS is U-shaped, with approximately one-quarter falling into both the big winner and the big loser categories. Here, GPs, FPs, and internists were relatively more likely to be "big winners," while the majority of ophthalmologists and thoracic surgeons fell into the "big loser" category.

Decomposition of Gains and Losses

Fee schedule simulations based on the resource-based relative value scale revealed dramatic revenue redistributions across specialties. These gains and losses, however, were calculated at the practice level, and

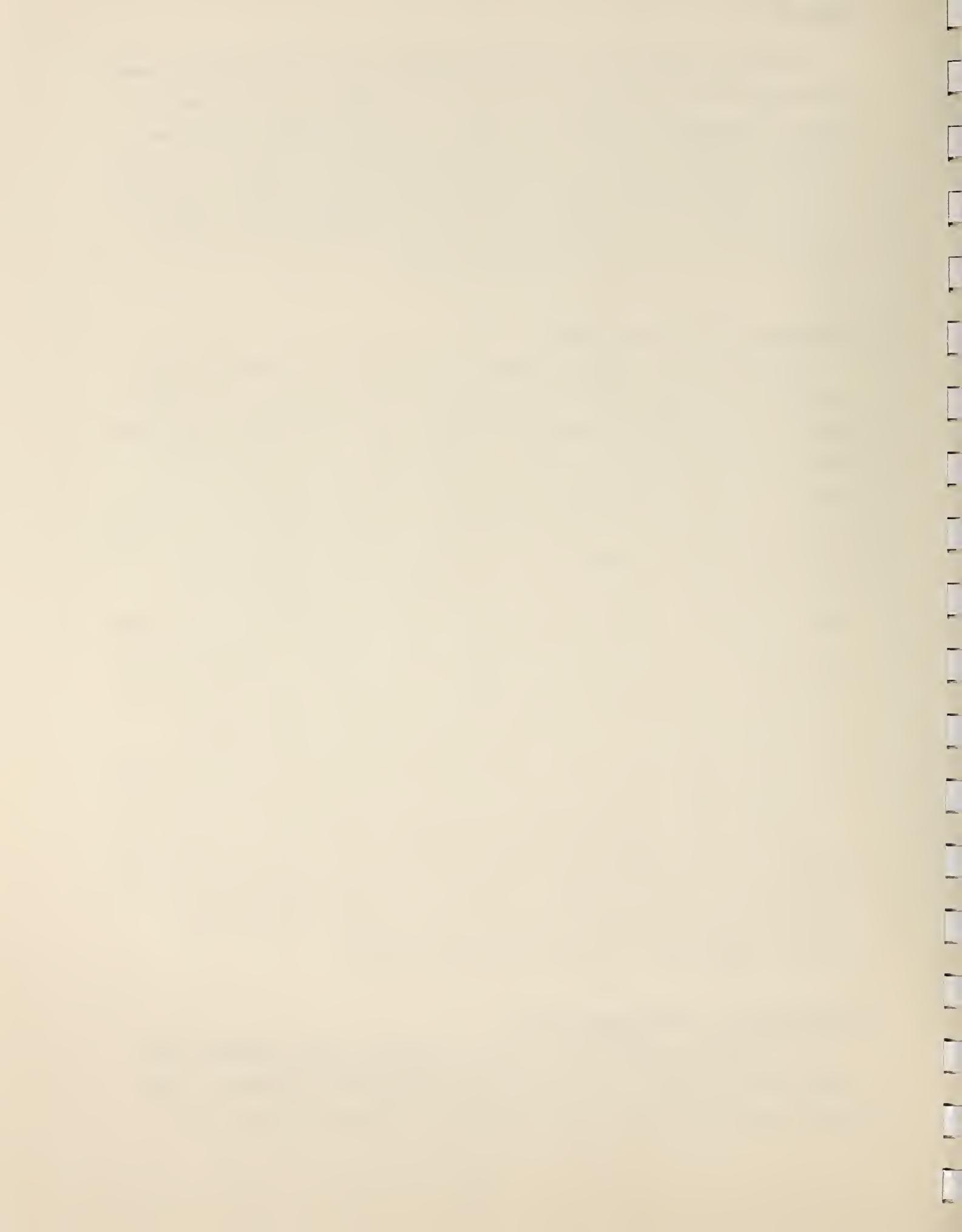


TABLE 4

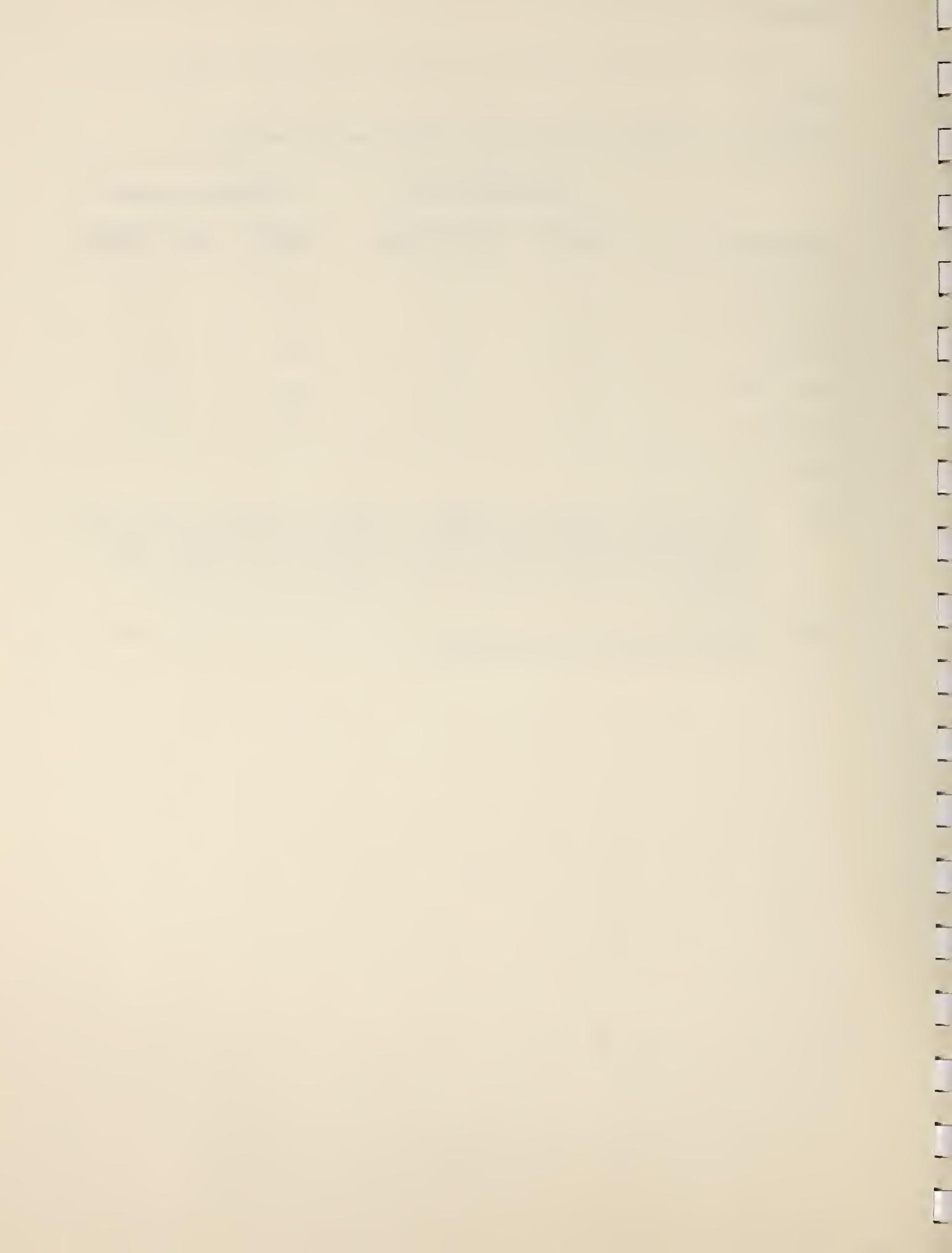
DISTRIBUTION OF GAINS AND LOSSES UNDER ALTERNATIVE FEE SCHEDULES^a

<u>Percent of Practices</u>	<u>CHARGE-BASED RVS</u>		<u>RESOURCE BASED RVS</u>	
	<u>Locality Neutral</u>	<u>With Practice Cost Adjustment</u>	<u>Locality Neutral</u>	<u>With Practice Cost Adjustment</u>
Big Winners	3.8%	5.3%	20.0%	24.2%
Small Winners	13.6	17.4	15.7	13.4
No Change	55.6	44.5	18.1	16.0
Small Losers	25.4	29.6	19.2	18.8
Big Losers	1.6	3.2	27.0	27.6

^aColumns sum to 100%.

Note: Big winners (losers) are practices with gains (losses) of 30% or more of their current Medicare revenues. Small winners (losers) have gains (losses) less than 30% but more than 10%. Practices with no change are those with either gains or losses of 10% or less. All practices have been weighted by their respective total allowed charges.

Source: BMAD 1986 Provider File, with revenues updated to 1988 taking into account Medicare payment changes.



represent net gains and losses after averaging across a large number of services and procedures. Do losing specialties tend to lose on all services they perform, or are some gains simply outweighed by relatively larger losses? To what extent are net practice gains (or losses) determined by a single procedure?

Table 5 decomposes average net revenue gains and losses for general surgeons by procedure or group of related procedures. The typical general surgery practice would lose a total of \$5,670 under a resource-based RVS fee schedule.* Total losses would have been far greater, however, were it not for the large gains made on office and hospital visits. Not surprisingly, the top four "loser" procedures would be cholecystectomy, colectomy, hernia repair, and colonoscopy. This is a reflection both of the frequency with which these operations are performed and of the per procedure reductions implied by the RBRVS. Mastectomy payments would also be cut, for example, but general surgeons do not perform as many of them on average.

Decomposition of gains and losses under a charge-based RVS fee schedule are shown for comparison purposes only. Gains and losses per procedure group would be relatively small.

Unlike general surgeons, thoracic surgeons and ophthalmologists would experience relatively little cancelling out across procedures (not shown) for two reasons. First, their Medicare volume is heavily concentrated in a handful of surgical procedures, procedures that are considered vastly overpaid under the RBRVS. Second, these two specialties provide relatively few visits, and thus have little opportunity to offset large losses. Coronary artery bypass graft surgery, for example, would account for the lion's share of the revenue loss for thoracic surgeons. Similarly, cataract surgery (and, to a lesser extent, ophthalmic ultrasound) drive the losses for ophthalmologists.

*These numbers represent simple averages across physician practices, unweighted by the practice's Medicare volume. Thus, they will not be directly comparable with the percentages shown in earlier tables.

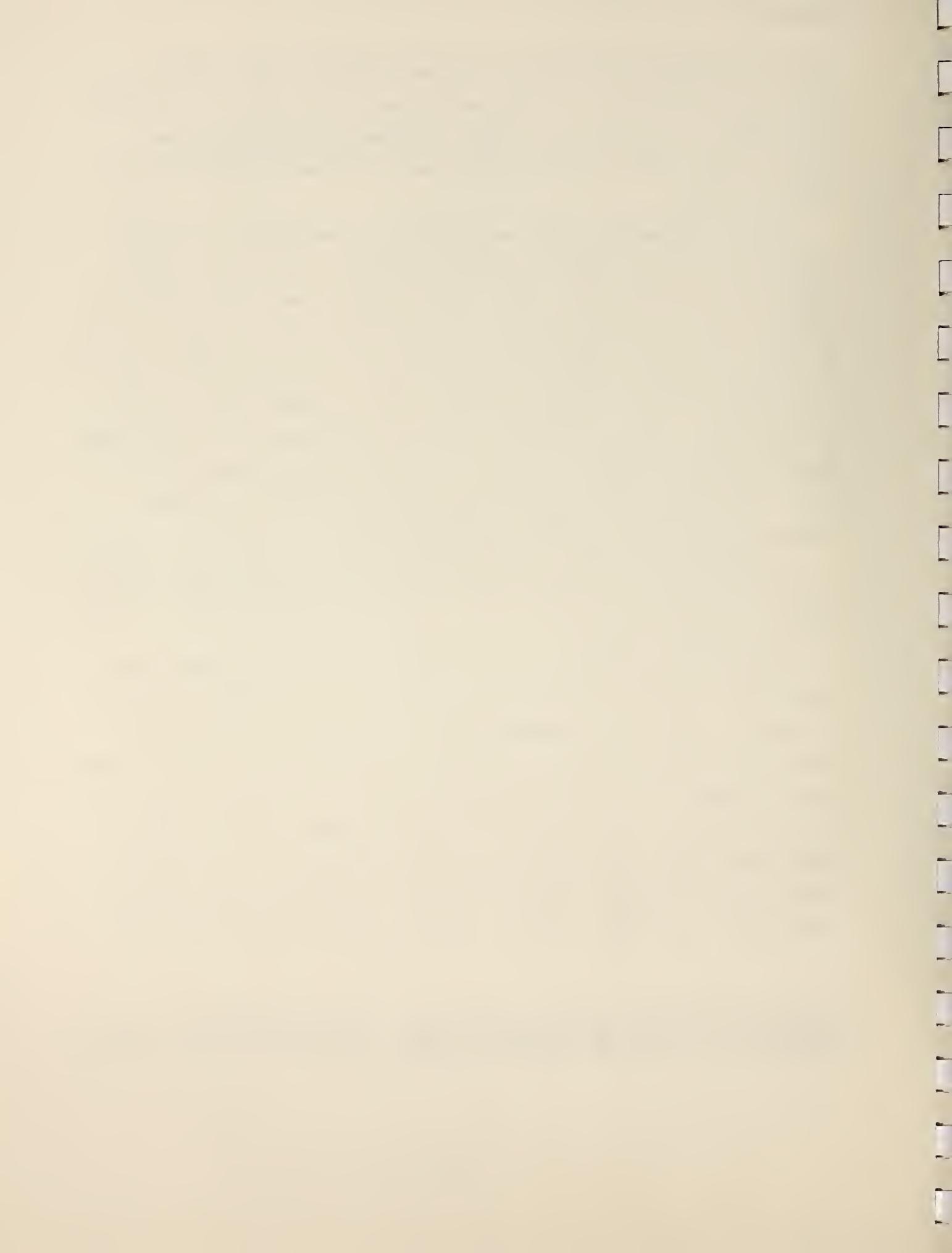


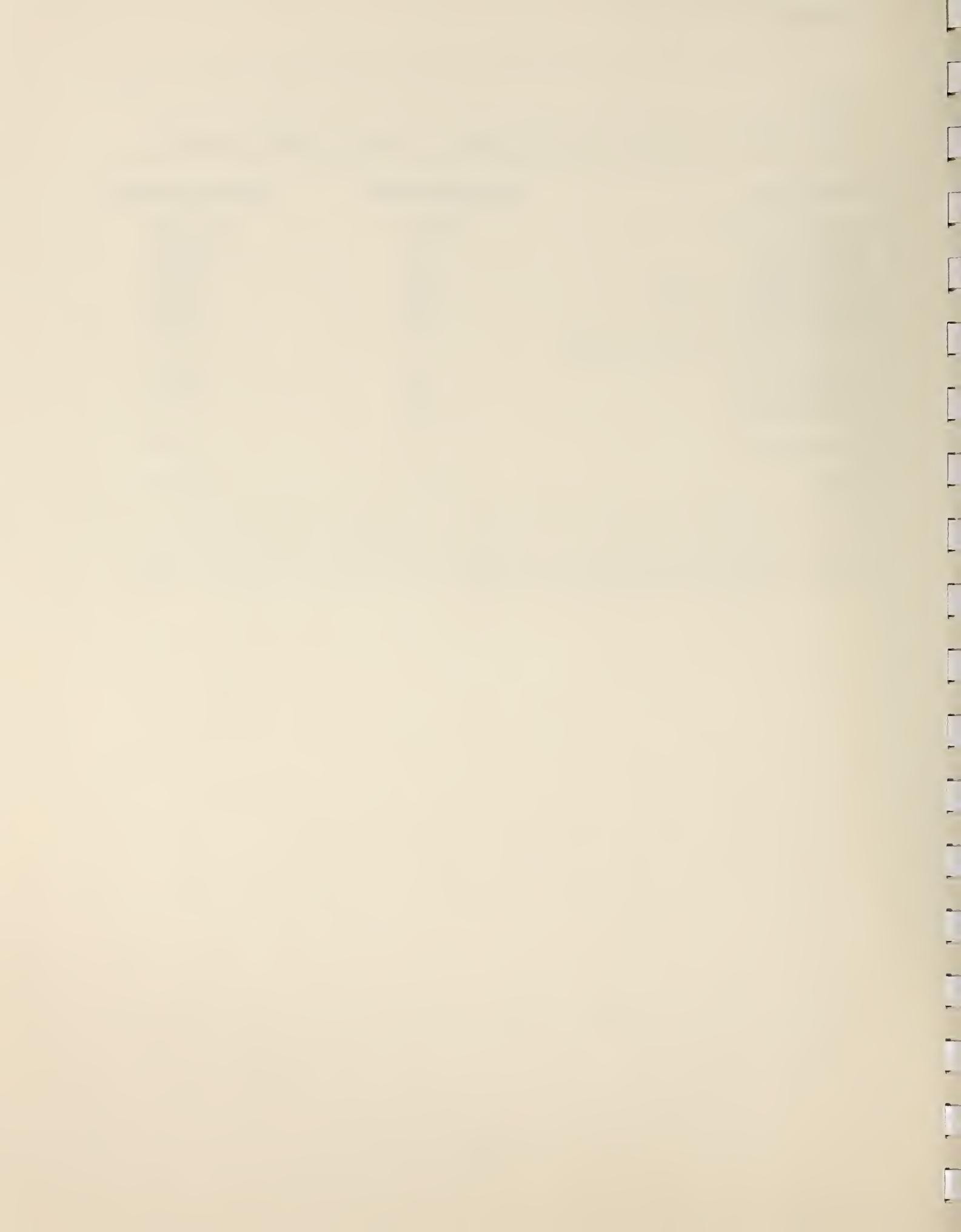
TABLE 5

DECOMPOSITION OF AVERAGE NET REVENUE GAINS (LOSSES) FOR GENERAL SURGEONS^a

<u>Procedure(s)</u>	<u>Charge-Based RVS</u>	<u>Resource-Based RVS</u>
Cholecystectomy	\$ (160)	\$ (1,915)
Colectomy	162	(1,867)
Hernia Repair	8	(1,820)
Colonoscopy	(143)	(1,422)
Thromboendarterectomy	(90)	(913)
Mastectomy	(43)	(724)
Cardiac Surgery	87	(1,604)
Other Surgery/Assistant Surgery	968	(560)
Office Visits	19	2,508
Hospital Visits	439	2,495
Consultations	248	630
Miscellaneous	161	(118)
<u>Total</u>	<u>1,656</u>	<u>(5,670)</u>

^aBoth fee schedules include an adjustment for geographic practice costs.

Source: BMAD 1986 Provider File, with revenues updated to 1988 taking into account Medicare payment changes.



As expected, the net average gain enjoyed by internists is the results of the large windfall associated with the visits they provide (see Table 6). Nevertheless, the total potential gain would be offset somewhat by losses on diagnostic services, especially ECGs.

CONCLUSIONS

Our results on the redistributive effects of the RBRVS are consistent with those reported by Hsiao *et al.*, (1988) and by PPRC (1989). Dramatic inter-specialty dislocations would result, with Medicare revenues being redistributed away from surgeons and radiologists to internists and general and family practitioners. By contrast, a charge-based RVS would impose relatively minor changes for most physicians. The elimination of the specialty differential in determining relative charges does produce substantial changes for some specialties, however, particularly dermatologists (gains) and gastroenterologists (losses). This is a factor in the RBRVS redistributions as well, as the resource-based relative values apply to all specialties performing a given procedure.

The use of a geographic practice cost adjustment in the conversion factor does have an independent effect on physicians' Medicare revenues. Even under a charge-based RVS, physicians practising in the North Central region and in rural areas would be better off. Nevertheless, the redistributive effect of the practice cost adjustment is still smaller than that of a relative value scale based on resource costs. Only 3 percent of physician practices would incur large losses (defined as reductions of 30 percent or more in their Medicare revenues) under a charge-based RVS with a conversion factor adjusted for geographic practice cost differences. By contrast, over one-quarter of practices would incur losses of this magnitude under an RBRVS, even without the practice cost adjustment.

Finally, we found relatively little cancelling out of gains and losses on individual procedures within a physician's practice. This is particularly true for surgical specialists whose Medicare practice is concentrated in one

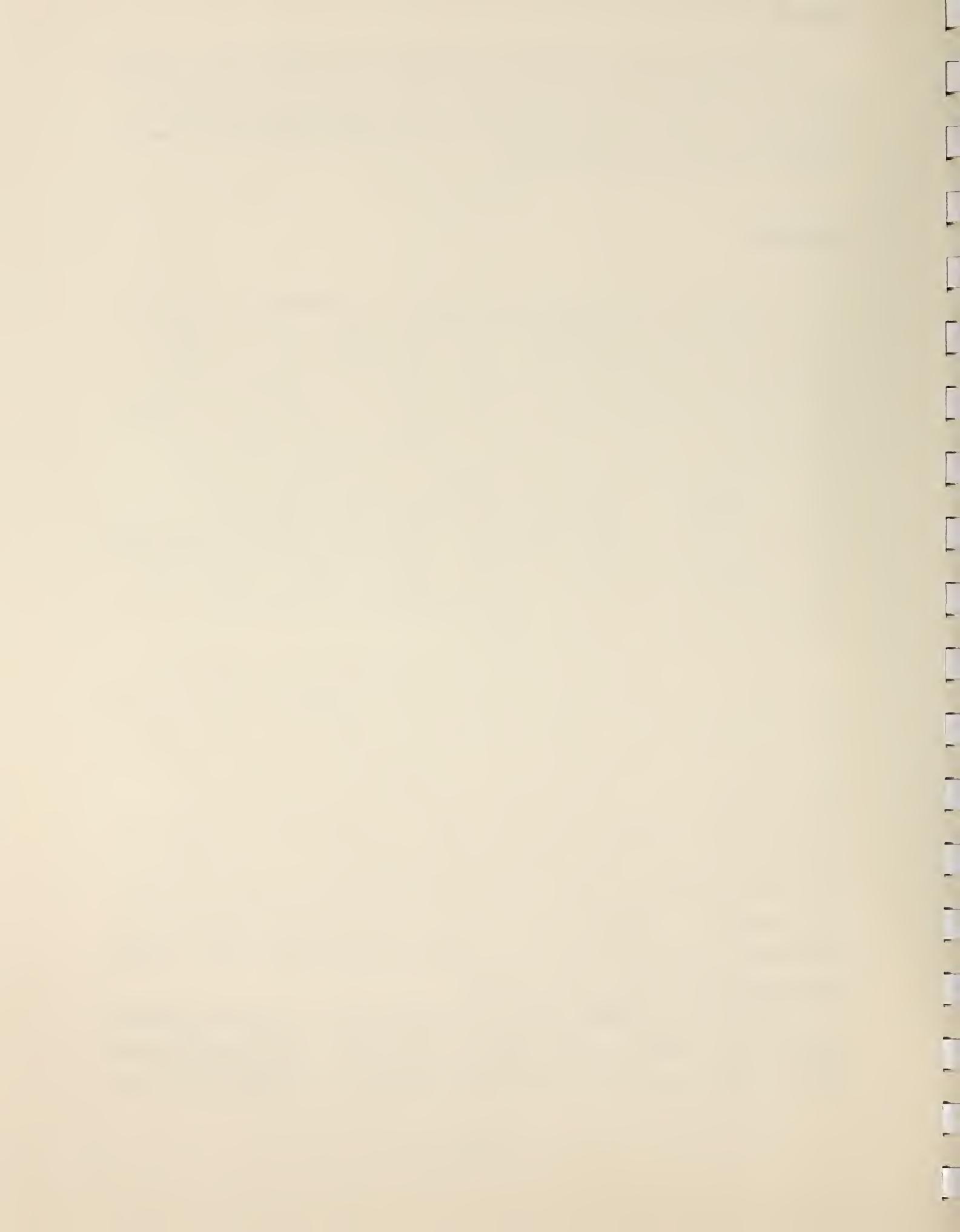


TABLE 6

DECOMPOSITION OF AVERAGE NET REVENUE GAINS (LOSSES) FOR INTERNISTS^a

<u>Procedure(s)</u>	<u>Charge-Based RVS</u>	<u>Resource-Based RVS</u>
Office Visits	\$ (1,675)	\$ 6,268
Hospital Visits	663	9,856
Consultations	(30)	815
Other Visits	109	582
ECGs	(476)	(2,049)
Colonoscopy	(137)	(778)
Proctosigmoidoscopy	1	126
Arthrocentesis	1	85
Other Surgery/Assistant Surgery	63	(290)
Radiology	(99)	(619)
Miscellaneous	170	(800)
Total	(1,410)	13,896

^aBoth fee schedules include an adjustment for geographic practice costs.

Source: BMAD 1986 Provider File, with revenues updated to 1988 taking into account Medicare payment changes.



or two operations. Those findings suggest that physicians may be limited in their ability to change the mix of services they provide, e.g., to substitute visits for surgery.



REFERENCES

Hsiao, William C. et al., "Results and Policy Implications of the Resource-Based Relative Value Study," New England Journal of Medicine, 319:881-888 (September 29), 1988.

Office of Technology Assessment, Payment for Physician Services Strategies for Medicare, Washington, D.C.: OTA, 1986.

Physician Payment Review Commission, Annual Report to Congress, 1988.

Physician Payment Review Commission, Annual Report to Congress, 1989.

Pope, Gregory C. et al., "Cost of Practice and Geographic Variation in Medicare Fees," Health Affairs, 8:117-128, Fall 1989.

Zuckerman, Stephen et al., "A Geographic Index of Physician Practice Costs," Journal of Health Economics, forthcoming.



METHODOLOGICAL APPENDIX



METHODOLOGICAL APPENDIX

This appendix outlines the simulation methodology, describes the data bases used, and details the approach used to construct the analytic file.

A.1 Simulation Methods

The construction of a fee schedule involves two components: (1) the relative values, or weights, assigned to each service; and (2) the conversion factor, or multiplier, that is used to express the relative values in dollars. In this project, we simulate the impacts of 18 different types of fee schedules: six different types of relative value scales, each with three different kinds of conversion factors. The relative value scales consisted of:

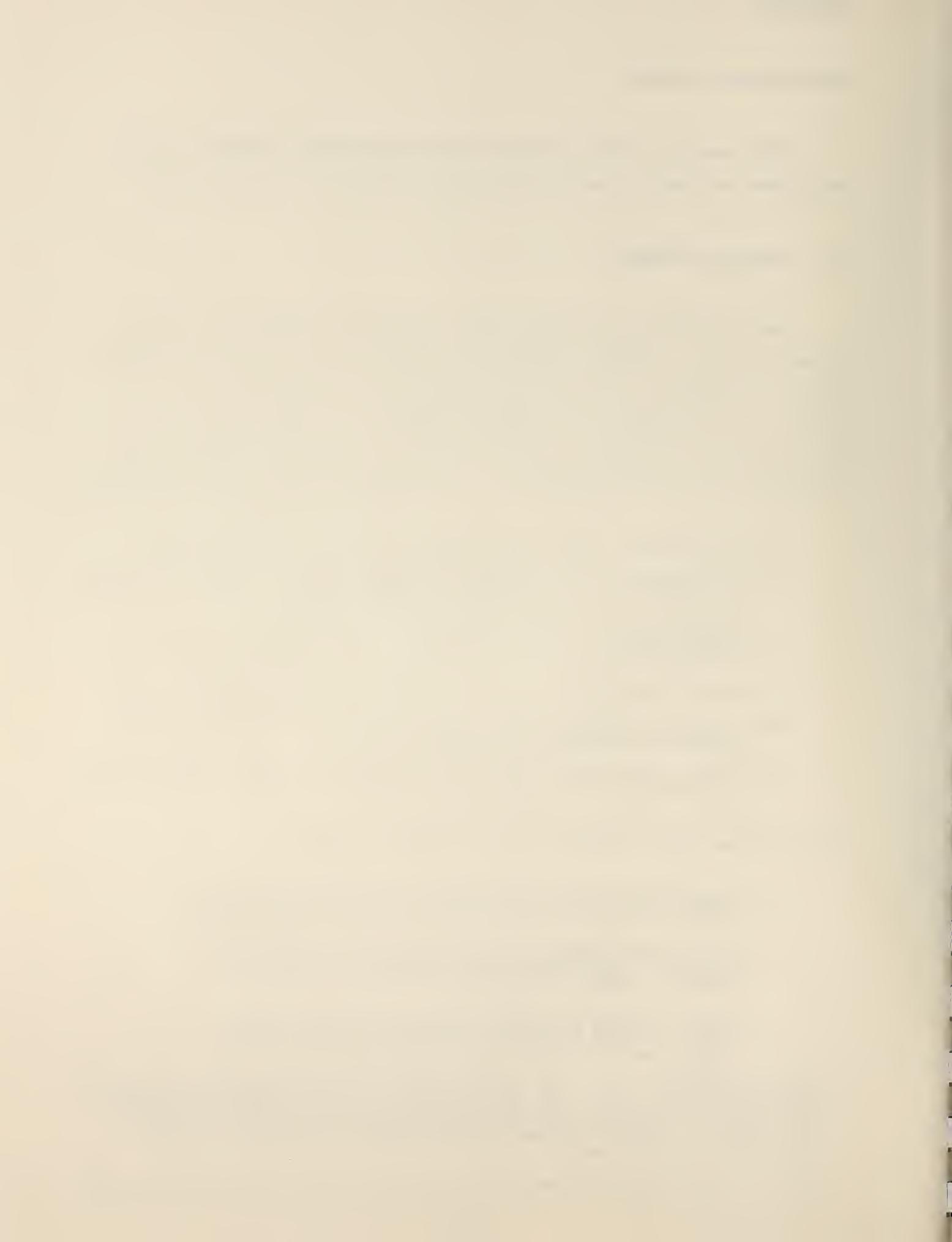
- (1) charge-based*, with unique relative values for every specialty;
- (2) charge-based, with no specialty differential (i.e. identical values for each service, regardless of who performs it);
- (3) charge-based, with specialty-specific values only for visits and consultations;
- (4) resource cost-based**, using only the work component of the scale;
- (5) resource cost-based, with the opportunity cost of training index included in multiplicative fashion; and
- (6) resource cost-based, with both the opportunity cost and the practice cost indices, i.e. the full RBRVS model.

We calculated three different types of conversion factors:

- (1) budget neutral at the reasonable charge locality level, intended to provide a "pure" measure of RVS impacts alone;
- (2) based on the Geographic Medicare Economic Index (GMEI), intended to take into account geographic variation in physician practice costs; and
- (3) based on a locality-specific Prevailing Charge Index (PCI), intended to take into account existing locality differences in relative Medicare prices.

*Submitted charges, rather than allowed charges, were used in the construction of the charge-based RVS, on the grounds that they more closely approximated market prices. In fact, it makes no difference to the results, as relative values based on submitted charges and those based on allowed charges are correlated at the 0.99 level.

**This is the resource-cost based RVS developed by Hsiao and colleagues (1988).



All conversion factors were calculated so as to be budget neutral at the national level, that is, so that total Medicare outlays will remain unchanged. This is done as follows for the first conversion factor:

$$CF_i = \frac{\sum_j MCRCHG_{ij}}{\sum_j (RV_{ij} * Q_{ij})}$$

where:

CF_i = conversion factor for the i -th locality;

$MCRCHG_j$ = Medicare allowed charges for the j -th service;

RV_j = relative value for the j -th service;

Q_j = quantity of the j -th service.

While this conversion factor will vary by reasonable charge locality, the other two are constants nationwide, e.g.:

$$CF_k = \frac{\sum_{ij} MCRCHG_{ij}}{\sum_{ij} (RV_{ij} * Q_{ij} * I_i)}$$

where:

CF_k = constant conversion factor;

I_i = GMEI (or PCI) index value for the i -th locality;

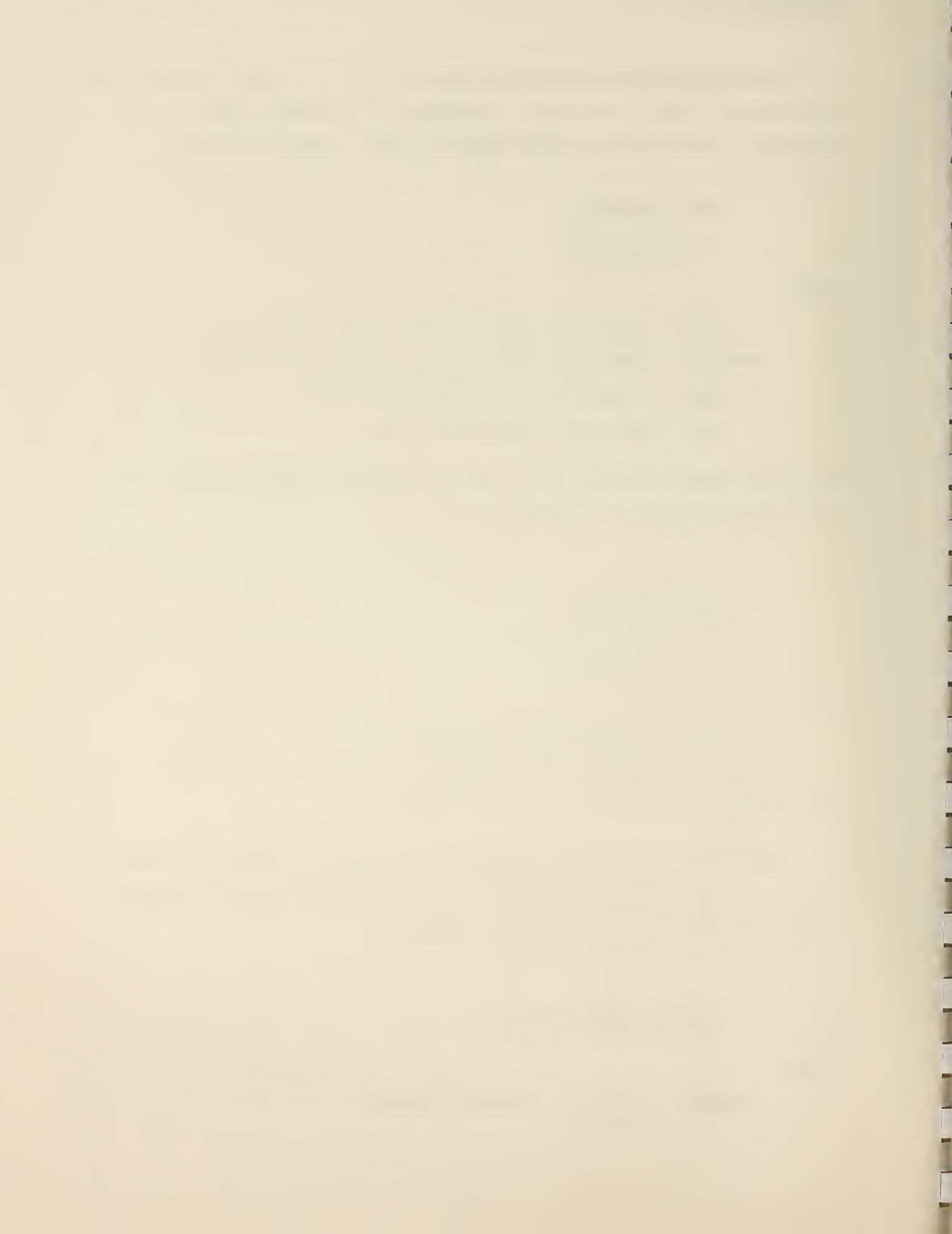
and all other notation is the same as before.

The actual simulation is then simply a matter of summing the relative values for a practice and multiplying by the appropriate conversion factor to obtain simulated Medicare revenues, as follows:

$$SIMREV_k = (\sum_j RV_{jk} * Q_{jk}) * CF$$

where:

$SIMREV_k$ = Medicare simulated revenues for the k -th practice.



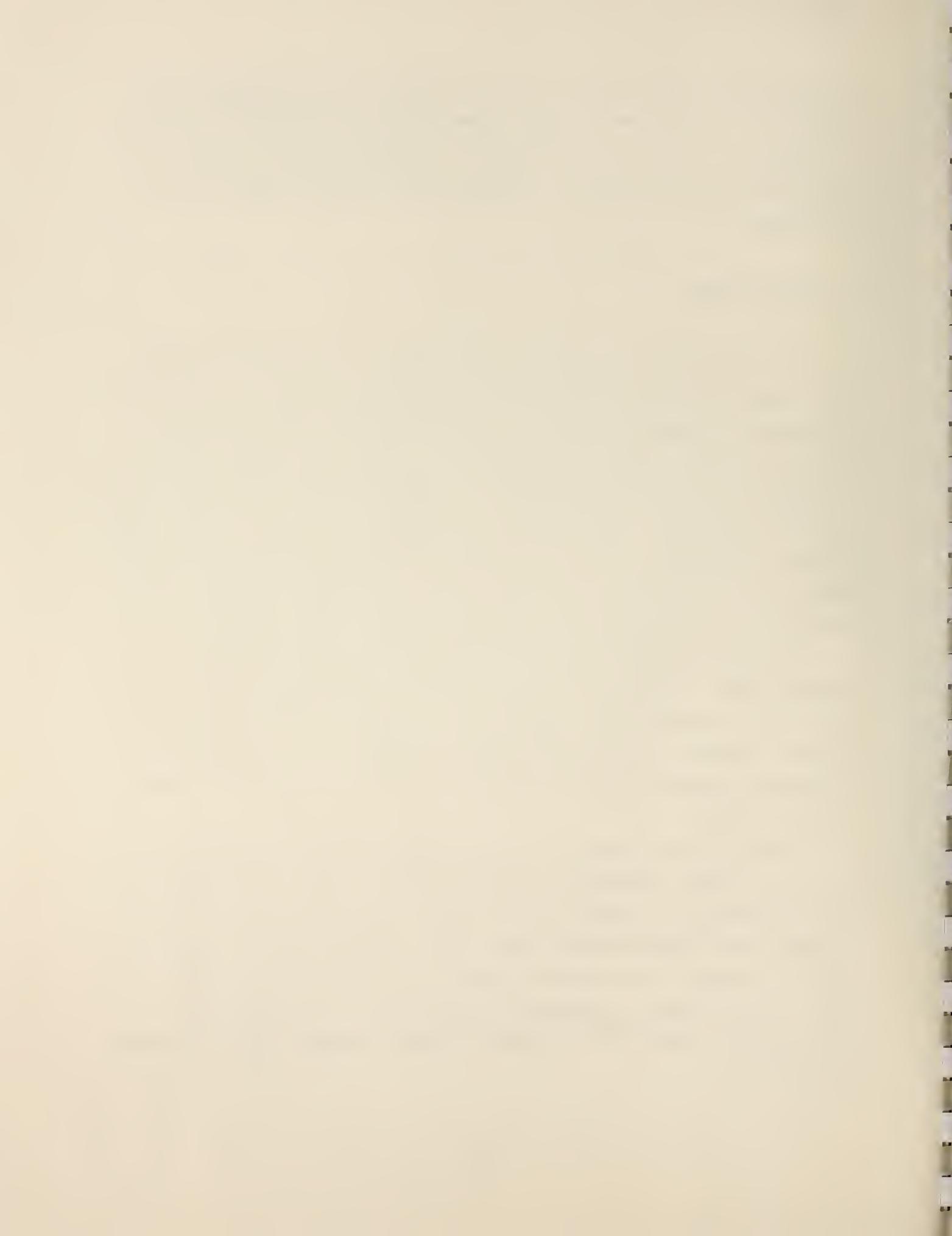
The actual CFs and actual sets of RV_j to be used will vary depending on the simulation to be performed. Because simulated Medicare revenues will depend in large part on the size of the practice's Medicare caseload to begin with, most analyses will be based on the percent gain or loss associated with the fee schedule.

A.2 Data Sources

The primary data base for the simulations is the 1986 BMAD provider file, which includes all Medicare Part B claims submitted by (or on behalf of) a five percent sample of providers. Because the sampling is performed by carriers from their provider directories, the sample is not self-weighting. A solo physician has the same probability of being selected as a 50-person group practice, for example. The practice is the sampling unit, not the individual physician. Nevertheless, for five percent of physician practices, we have a complete and detailed picture of their Medicare activity. In the following section (A.3), we describe how we actually constructed the analytic files.

The charge-based relative value scales were obtained from the Office of Research, HCFA. The Resource Cost-Based Relative Value Scale was available as a public use tape from NTIS. Neither set of scales had relative values for assistant surgery. We calculated assistant surgery values as 20 percent of the relative value for the full procedure, following the payment rule adopted by most carriers.

The two indices (GMEI and Prevailing Charge Index) had been developed in part here at CHER. The GMEI is a standard Laspeyres index that compares the cost of purchasing an identical market basket of physician practice inputs in different areas (MSAs and state rural areas). A complete description can be found in Zuckerman, Welch, and Pope (1988). The Prevailing Charge Index is also a Laspeyres index and measures the fee level of a fixed basket of procedures in a locality to the national average. For more detail, see Pope *et al.* (1989).



A.3 Construction of Physician Practice Aggregates

Because the RBRVS had been constructed to measure the costs of physician services, we excluded all non-physician services from the provider file (e.g. durable medical equipment), as well as all non-physician providers. Our file included both MD and DO physician practices. We also excluded anesthesiologists for two reasons. First, Medicare currently pays anesthesiologists very differently from other physicians (taking time as well as procedure into account, for example), making the calculation of charge-based relative values difficult. Second, a substantial proportion of anesthesia reimbursement is for the supervision of CRNAs; since the RBRVS assumes that the anesthesiologist personally performs all services, comparisons of simulated and actual payments would be biased.

Two other types of exclusions were made. We dropped all practices that did not have at least \$100 in total Medicare billings for the year, on the grounds that these practices had only a marginal attachment to the Medicare market. We also dropped all practices sampled by the carrier who handles railroad claims. Because only services provided to railroad retirees would be included (as opposed to all services provided to Medicare beneficiaries), we would not have a complete picture of Medicare activity in those practices. The final sample size is shown in Table A-1. The first column represents the actual number of practices, overall and by specialty, included in the analysis. The second column is a frequency distribution that has been weighted by each specialty's total allowed charges. While there are a surprising number of pediatricians in the sample (150, or 1% of the total), for example, they represent only 0.1 percent of total Medicare allowed charges. By contrast, the 701 ophthalmologists generate 13.5 percent of the Medicare bills.

A.4 Methodology For Inflating 1986 Allowed Charges To 1988

Since 1986, Congress has made a number of changes in the relative prices paid for physicians' services, both by type of service and by the

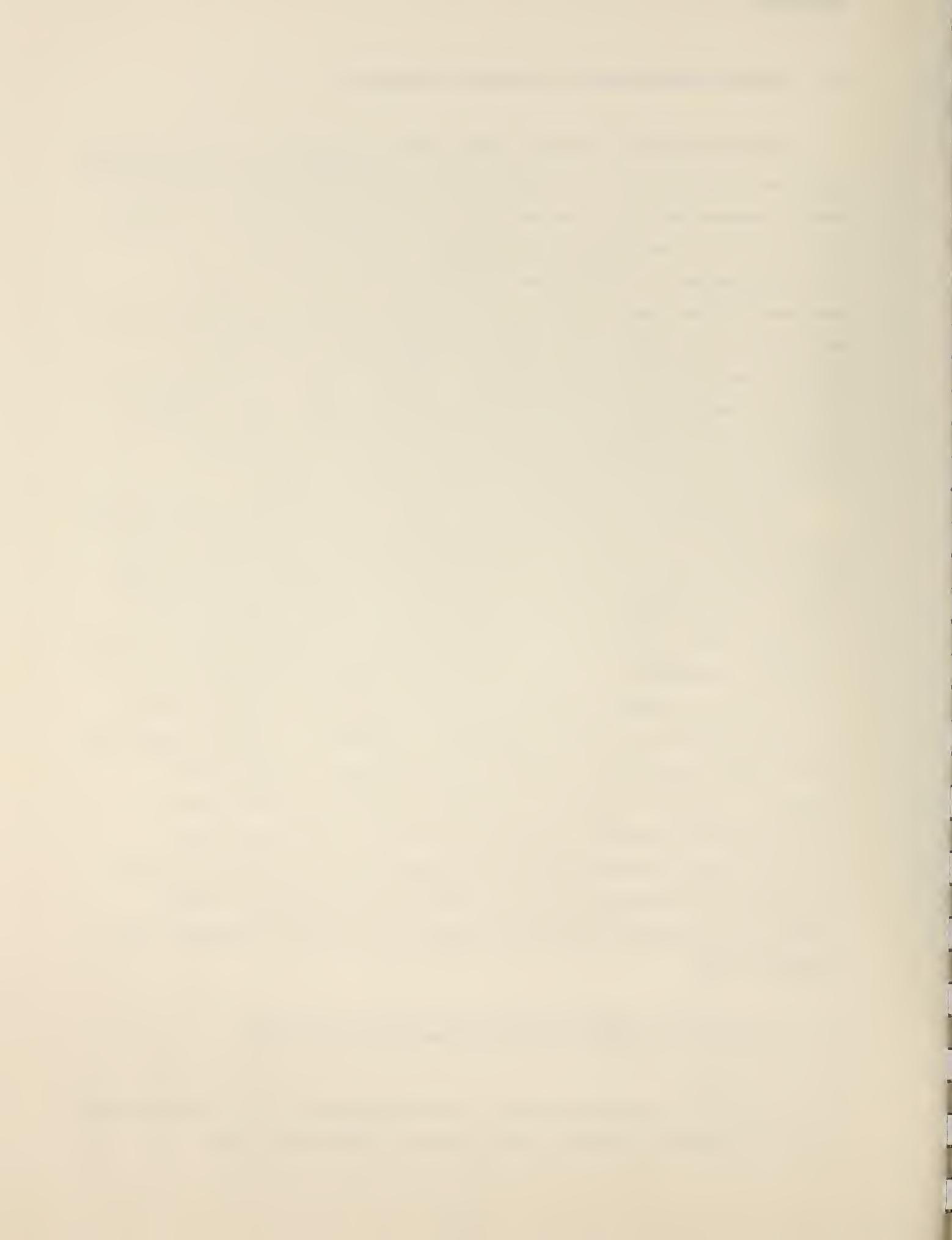


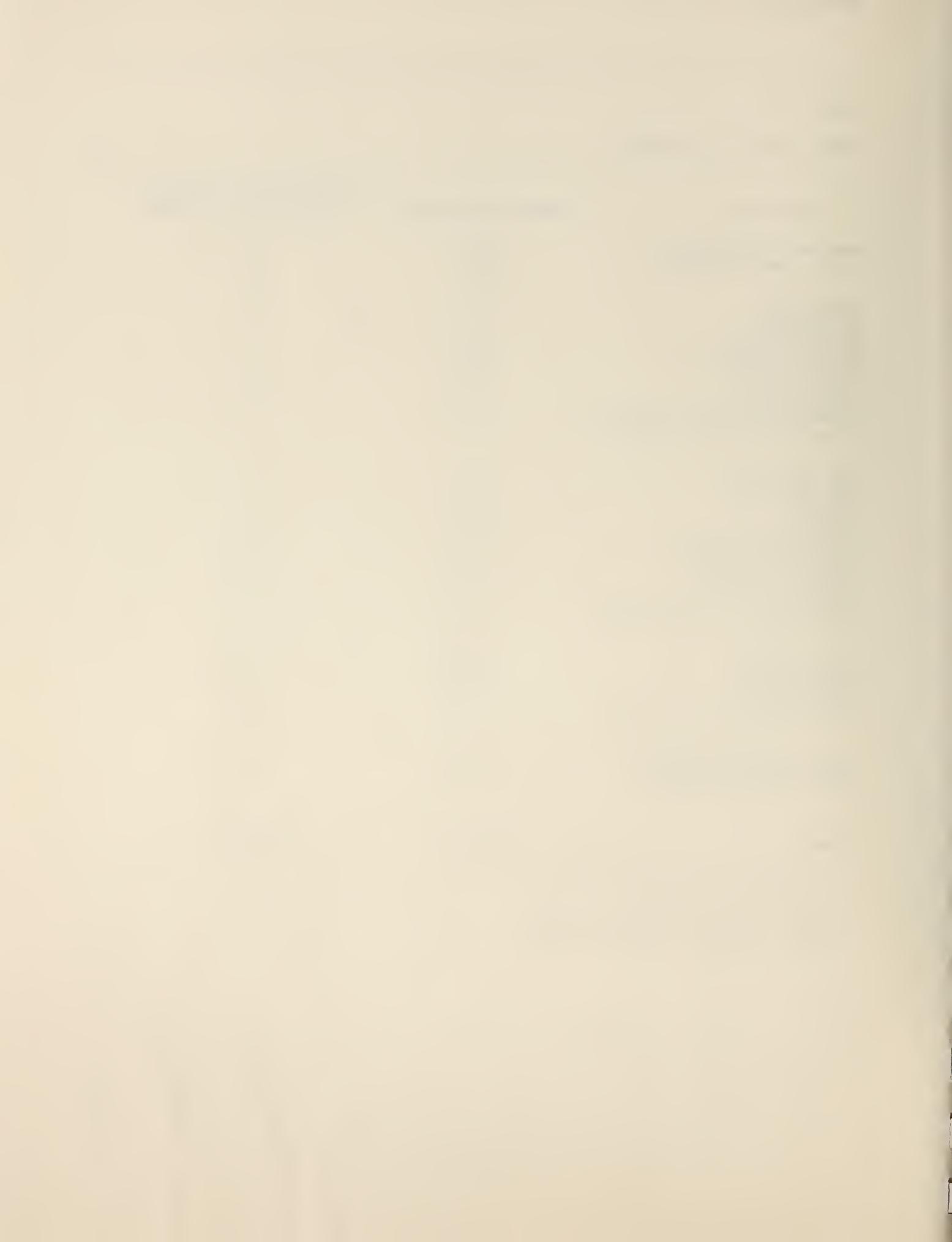
TABLE A-1

SAMPLE SIZES BY SPECIALTY

<u>Specialty</u>	<u>Number of Practices</u>	<u>Caseload As Percent Of Total Part B Spending</u>
General Practitioners	1,786	4.5%
Family Practitioners	1,667	4.5
Internists	2,889	18.7
Allergists	78	0.1
Cardiologists	558	7.5
Dermatologists	298	1.7
Gastroenterologists	175	2.3
Nephrologists	99	0.9
Pediatricians	150	0.1
Pulmonary Disease Specialists	167	1.5
Other Medical Specialists	22	a
General Surgeons	1,181	7.6
ENT Surgeons	298	1.0
Neurosurgeons	137	0.9
OB-GYNs	1,014	0.7
Ophthalmologists	701	13.5
Orthopedic Surgeons	620	4.6
Plastic Surgeons	158	0.4
Thoracic Surgeons	169	3.0
Urologists	356	3.3
Other Surgical Specialists	45	0.3
Neurologists	360	1.6
Pathologists	141	0.6
Psychiatrists	1,026	1.4
Radiologists	604	8.5
Rehabilitation Specialists	106	0.4
Multi-Specialty Groups	385	7.5
Other Group Practices	175	1.3
Miscellaneous/Unknown	296	1.5
Total	15,661	100.0%

^aLess than 0.1 percent.

Source: BMAD provider file, 1986



participation status of the physician. The objective of these changes has been to reduce the payment differential between primary care and surgical procedures (particularly those regarded as especially "overpaid") and to widen the differential between participating and nonparticipating physicians. Failure to incorporate these reimbursement changes in the simulation methodology would exaggerate the redistributive effects of a resource cost-based RVS. Therefore, we decided to "inflate" our 1986 allowed charges to 1988.

We assumed that the practice's participation status in 1986 held for 1988 as well. No data existed that would have allowed us to update any changes in status. This should not introduce much error, however, as panel survey data have shown relatively little change in participation status from October 1984 through the January 1987 decision (Rosenbach *et al.*, 1988).

The actual charge updates took place in two steps, first to update charges from 1986 to 1987, and then from 1987 to 1988. The two-step process was necessary, because payments for cataract surgery were "rolled back" sequentially in each year. These steps are described below.

A.4.1 Updating from 1986 to 1987

The allowed charge determination is based on a comparison of three charges: the physician's actual (submitted) charge, his/her customary charge (the median submitted charge for that service during the past year), and the prevailing charge (originally based on the 75th percentile of all physicians' customary charges, but its annual rate of increase is now constrained by the Medicare Economic Index). Thus, in order to update allowed charges, we must update each one of these charges. In order to do this, the following assumptions were made for participating physicians practices:

- (1) The increase in the actual charge was assumed to be the same as that of the physician fee component of CPI (8.1%).



- (2) Customary charges were assumed to increase at the same rate as actual charges. (The absolute levels of customary charges, of course, may be lower.)
- (3) The prevailing charge was increased by the actual MEI update.

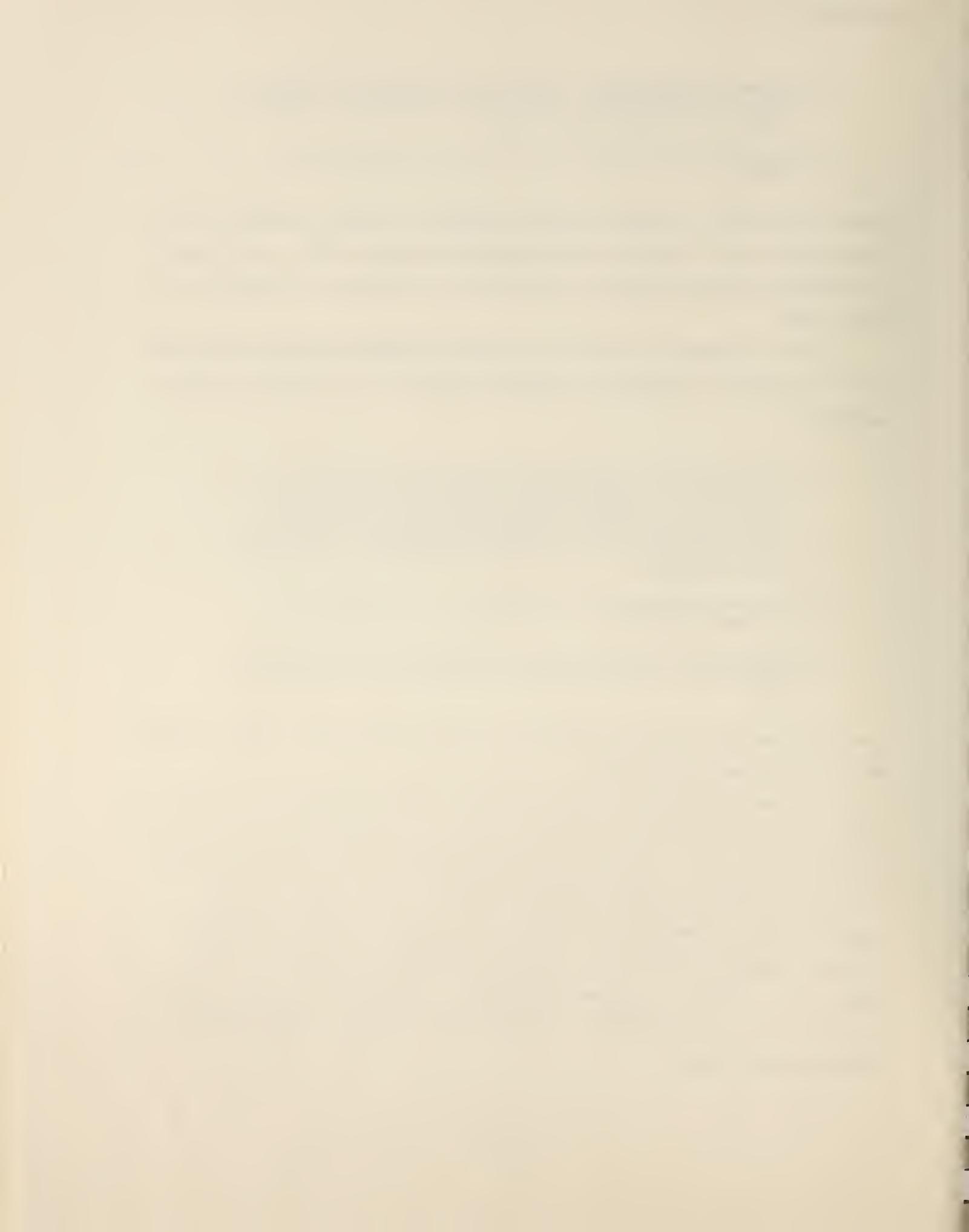
These three rates of increase were then weighted to obtain an average rate of increase from 1986 to 1987 (for participating physicians only). The weights were obtained from the 1986 BMAD provider file (as reported by Reynolds and Moser, 1988).

Because increases in the actual charges of nonparticipating physicians were constrained by the MAACs, a somewhat different set of assumptions were necessary:

- (1) We assumed that 50 percent of actual charges were in excess of 115 percent of the prevailing and hence eligible for only the one percent MAAC update. The remaining charges were divided evenly between maximum and moderate expected updates, and a weighted average was calculated to obtain the expected rate of increase in actual charges for nonparticipants.
- (2) Customary charges were constrained to the same rate of increase as actuals.
- (3) The rate of increase in the prevailing was calculated as 96 percent of the participants' prevailing, as mandated by law.

A weighted average of these three rates was then calculated in the same manner as for participating physicians.

This methodology was used for all services, except cataract surgery. In 1987, prevailing charges for cataract surgery were reduced 10 percent, subject to a 75 percent floor. Separate (lower) prevailing charge levels and floors were calculated for nonparticipating physicians. For participants and nonparticipants separately, we increased actual and customary charges for cataract surgery to 1987 levels, and then compared these charges with the prevailings in effect for these procedures. If the actual/customary charge was higher than the prevailing, then the 1987 allowed charge was defined as the prevailing charge.



- (2) Customary charges were assumed to increase at the same rate as actual charges. (The absolute levels of customary charges, of course, may be lower.)
- (3) The prevailing charge was increased by the actual MEI update.

These three rates of increase were then weighted to obtain an average rate of increase from 1986 to 1987 (for participating physicians only). The weights were obtained from the 1986 BMAD provider file (as reported by Reynolds and Moser, 1988).

Because increases in the actual charges of nonparticipating physicians were constrained by the MAACs, a somewhat different set of assumptions were necessary:

- (1) We assumed that 50 percent of actual charges were in excess of 115 percent of the prevailing and hence eligible for only the one percent MAAC update. The remaining charges were divided evenly between maximum and moderate expected updates, and a weighted average was calculated to obtain the expected rate of increase in actual charges for nonparticipants.
- (2) Customary charges were constrained to the same rate of increase as actuals.
- (3) The rate of increase in the prevailing was calculated as 96 percent of the participants' prevailing, as mandated by law.

A weighted average of these three rates was then calculated in the same manner as for participating physicians.

This methodology was used for all services, except cataract surgery. In 1987, prevailing charges for cataract surgery were reduced 10 percent, subject to a 75 percent floor. Separate (lower) prevailing charge levels and floors were calculated for nonparticipating physicians. For participants and nonparticipants separately, we increased actual and customary charges for cataract surgery to 1987 levels, and then compared these charges with the prevailings in effect for these procedures. If the actual/customary charge was higher than the prevailing, then the 1987 allowed charge was defined as the prevailing charge.



A.4.2 Updating from 1987 to 1988

The same basic methodology was used to inflate allowed charges to 1988 levels as had been used to update from 1986 to 1987. The main differences were that Congress gave a larger MEI update to primary care services (3.6% versus 1% for all other services), increased the participant-nonparticipant prevailing charge differential from 96 percent to 95.5 percent, and rolled-back prevailing charges for eleven specific types of surgical procedures.

Rather than an across-the-board reduction, a complex formula was devised to reduce Medicare prevailing charges disproportionately more in high fee areas. We obtained the actual prevailing charges in effect in 1988 for these procedures. These prevailings were then compared with updated actual and customary charges on an individual practice basis (taking into account procedure code, reasonable charge locality, specialty, and participation status). If the actual or customary charge was higher than the rolled-back prevailing, the 1988 allowed charge was defined at the level of the prevailing; otherwise the actual or customary charge remained the allowed charge.



APPENDIX TABLES

TABLE A-1

AVERAGE GAIN (LOSS) AS PERCENT OF CURRENT MEDICARE REVENUES: CHARGE-BASED
RELATIVE VALUE SCALES^a

	<u>RCL-NEUTRAL CONVERSATION FACTOR</u>		<u>GPCI CONVERSION FACTOR</u>	
	<u>No Specialty Differential</u>	<u>Specialty Differential for Visits</u>	<u>No Specialty Differential</u>	<u>Specialty Differential for Visits</u>
GPs/FPs	9.3%	-4.8%	10.6%	-4.7%
Internists	-3.8	-1.5	-3.3	-0.9
Cardiologists	-4.4	0.3	-7.3	-2.3
Dermatologists	16.9	16.2	16.3	15.7
Gastroenterologists	-8.7	-5.7	-11.4	-8.1
Pediatricians	-0.7	9.8	-3.5	6.6
General Surgeons	1.1	-0.2	2.6	1.0
ENT Surgeons	10.1	5.3	8.8	4.0
OB-GYNs	7.1	7.2	7.0	7.2
Ophthalmologists	-2.4	-2.2	-2.6	-2.3
Orthopedic Surgeons	-0.01	0.4	-0.7	-0.5
Thoracic Surgeons	1.0	1.4	0.1	0.9
Urologists	0.7	-1.6	0.1	-2.1
Multi-Specialty Groups	0.9	1.4	0.9	1.8
Psychiatrists	20.6	29.7	24.6	33.9
Pathologists	-0.8	-0.3	2.1	2.4
Radiologists	-2.9	-2.5	-2.5	-2.0
All Physicians ^b	0.0	0.0	0.0	0.0

^aMeans are weighted by the practice's total allowed charges.

^bBased on all specialties, not just those on table. Percentages are zero, because of budget neutrality assumption.



TABLE A-2

AVERAGE GAIN (LOSS) AS PERCENT OF CURRENT MEDICARE REVENUES: CHARGE-BASED RVS
WITH NO SPECIALTY DIFFERENTIAL^a

	<u>All Locations</u>	<u>Urban</u>	<u>Rural</u>
GPs/FPs	9.3%	8.8%	10.1%
Internists	-3.8	-3.8	-3.8
Cardiologists	-4.4	-3.8	-7.4
Dermatologists	16.9	18.4	11.8
Gastroenterologists	-8.7	-8.4	-11.0
Pediatricians	-0.7	3.1	-18.6
General Surgeons	1.1	0.9	1.5
ENT Surgeons	10.1	5.9	25.8
OB-GYNS	7.1	6.4	9.1
Ophthalmologists	-2.4	-0.7	-7.5
Orthopedic Surgeons	-0.0	-0.1	0.4
Thoracic Surgeons	1.0	-4.6	26.4
Urologists	0.7	1.3	-0.9
Multi-Specialty Groups	0.9	1.5	-1.0
Pathologists	-0.8	6.6	-12.9
Radiologists	-2.9	-0.4	-9.3
All Physicians^b	0.0	0.0	0.0

^aMeans are weighted by the practice's total allowed charges.

^bBased on all specialties not just those on table.

Note: Simulations are based on RCL-neutral conversion factors.

Source: BMAD provider file, 1986.

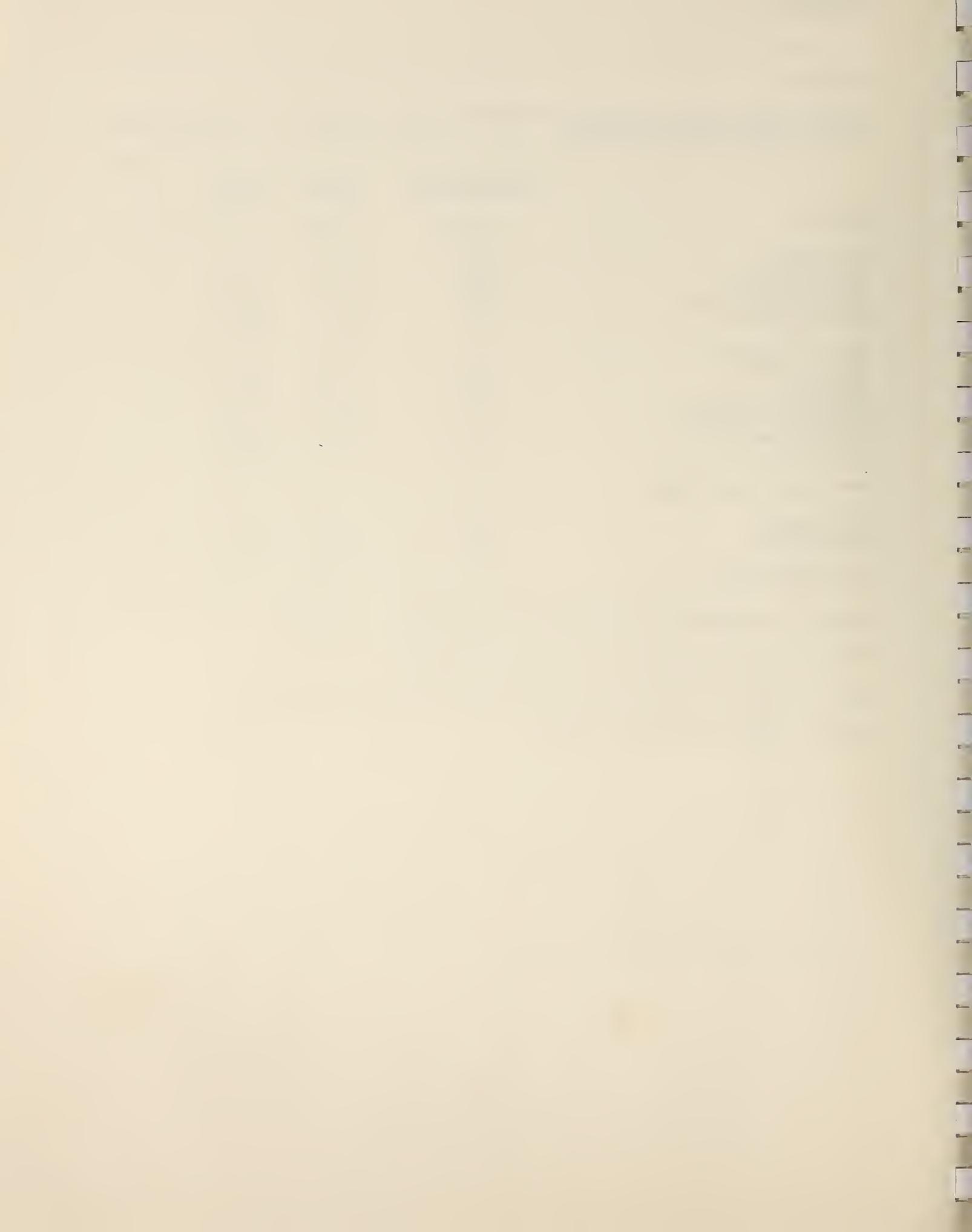


TABLE A-3

AVERAGE GAIN (LOSS) AS PERCENT OF CURRENT MEDICARE REVENUES: CHARGE-BASED RVS WITH SPECIALTY DIFFERENTIAL FOR VISITS ONLY^a

	<u>All Locations</u>	<u>Urban</u>	<u>Rural</u>
GPs/FPs	-4.8%	-6.1%	-2.6%
Internists	-1.5	-1.8	-0.3
Cardiologists	0.3	1.0	-2.7
Dermatologists	16.2	17.2	13.1
Gastroenterologists	-5.7	-5.4	-8.1
Pediatricians	9.8	14.6	-12.6
General Surgeons	-0.2	-0.9	1.7
ENT Surgeons	5.3	0.2	24.4
OB-GYNS	7.2	5.9	11.2
Ophthalmologists	-2.2	-0.8	-6.1
Orthopedic Surgeons	0.4	-0.2	2.4
Thoracic Surgeons	1.4	-4.5	28.4
Urologists	-1.6	-1.7	-1.3
Multi-Specialty Groups	-1.4	1.7	0.3
Pathologists	0.3	6.5	-11.2
Radiologists	-2.5	-0.4	-8.0
All Physicians ^b	0.0	0.0	0.0

^aMeans are weighted by the practice's total allowed charges.

^bBased on all specialties not just those on table.

Note: Simulations are based on RCL-neutral conversion factors.

Source: BMAD provider file, 1986.



TABLE A-4

AVERAGE GAIN (LOSS) AS PERCENT OF CURRENT MEDICARE REVENUES: CHARGE-BASED RVS
WITH NO SPECIALTY DIFFERENTIAL^a

	<u>All Locations</u>	<u>Urban</u>	<u>Rural</u>
GPs/FPs	10.6%	8.7%	13.6%
Internists	-3.3	-4.1	0.2
Cardiologists	-7.3	-6.8	-9.8
Dermatologists	16.3	16.9	14.4
Gastroenterologists	-11.4	-11.5	-11.1
Pediatricians	-3.5	-2.8	-6.8
General Surgeons	2.6	1.5	5.3
ENT Surgeons	8.8	3.3	29.4
OB-GYNS	7.0	4.7	14.1
Ophthalmologists	-2.6	-2.1	-4.2
Orthopedic Surgeons	-0.7	-1.6	2.2
Thoracic Surgeons	0.1	-8.1	37.8
Urologists	0.1	-0.9	2.9
Multi-Specialty Groups	0.9	1.0	0.6
Pathologists	2.1	7.7	-7.2
Radiologists	-2.5	0.2	-9.3
All Physicians ^b	0.0	-1.0	3.1

^aMeans are weighted by the practice's total allowed charges.

^bBased on all specialties not just those on table.

Note: All simulations use a GPCI conversion factor.

Source: BMAD provider file, 1986.



TABLE A-5

AVERAGE GAIN (LOSS) AS PERCENT OF CURRENT MEDICARE REVENUES: CHARGE-BASED RVS
WITH SPECIALTY DIFFERENTIAL FOR VISITS ONLY^a

	<u>All Locations</u>	<u>Urban</u>	<u>Rural</u>
GPs/FPs	-4.7%	-6.3%	-2.0%
Internists	-0.9	-1.8	2.5
Cardiologists	-2.3	-1.6	-5.9
Dermatologists	15.7	16.0	14.5
Gastroenterologists	-8.1	-8.2	-7.6
Pediatricians	6.6	8.2	-0.8
General Surgeons	1.0	0.0	3.7
ENT Surgeons	4.0	-2.0	26.2
OB-GYNS	7.2	4.8	14.9
Ophthalmologists	-2.3	-1.9	-3.8
Orthopedic Surgeons	-0.5	-1.6	2.9
Thoracic Surgeons	0.9	-7.4	38.7
Urologists	-2.1	-3.3	1.1
Multi-Specialty Groups	1.8	1.9	1.5
Pathologists	2.4	8.1	-6.8
Radiologists	-2.0	0.7	-8.9
All Physicians ^b	0.0	-0.6	1.8

^aMeans are weighted by the practice's total allowed charges.

^bBased on all specialties not just those on table.

Note: All simulations use a GPCI conversion factor.

Source: BMAD provider file, 1986.



TABLE A-6

DISTRIBUTION OF MEDICARE REVENUES BY SIZE OF PRACTICE'S GAIN (LOSS) BY SPECIALTY: CHARGE-BASED RVS WITH NO SPECIALTY DIFFERENTIAL^a

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break- Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
GP/FPs	2.5%	14.6%	36.5%	30.2%	16.3%
Internists	4.1	33.1	44.0	15.8	3.0
Cardiologists	6.0	50.2	34.9	6.2	2.8
Dermatologists	5.6	23.6	34.2	13.4	23.2
Gastroenterologists	3.1	61.6	29.5	4.8	1.1
Pediatricians	13.7	27.1	24.5	27.0	7.7
General Surgeons	3.7	21.4	45.8	22.8	6.3
ENT Surgeons	1.7	26.8	47.8	18.2	5.6
OB-GYNs	2.5	19.9	38.4	25.9	13.3
Ophthalmologists	2.0	24.7	55.2	16.3	1.9
Orthopedic Surgeons	1.5	26.6	50.6	18.4	2.9
Thoracic Surgeons	8.7	42.2	37.9	5.7	5.6
Urologists	2.4	25.2	46.8	23.4	2.3
Multi-specialty Groups	1.9	27.7	47.9	16.6	5.8
Pathologists	13.6	32.1	24.6	16.8	12.9
Radiologists	3.3	33.0	42.7	16.5	4.6
All Physicians ^b	3.6	30.1	43.4	17.3	5.6

^aRows sum to 100 percent. Practices have been weighted by total allowed charges.

^bBased on all specialties, not just those listed on table.

Note: All simulations use a GPCI conversion factor.

Source: BMAD provider file, 1986.



TABLE A-7

DISTRIBUTION OF MEDICARE REVENUES BY SIZE OF PRACTICES GAIN (LOSS) IN RURAL AREAS: CHARGE-BASED RVS WITH NO SPECIALTY DIFFERENTIALS^a

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break- Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
GPs/FPs	3.1%	11.2%	39.2%	31.2%	15.%3
Internists	5.9	23.8	54.8	13.6	1.9
Cardiologists	5.0	37.5	52.7	2.1	2.8
Dermatologists	0.0	26.4	35.7	17.9	20.0
Gastroenterologists	0.0	56.9	37.3	5.8	0.0
Pediatricians	43.5	21.7	25.9	4.9	4.0
General Surgeons	3.6	12.8	57.9	23.6	2.1
ENT Surgeons	0.1	10.4	47.1	33.9	8.5
OB-GYNS	0.2	3.8	50.9	36.4	8.7
Ophthalmologists	1.9	31.1	65.3	1.7	0.1
Orthopedic Surgeons	0.0	16.4	68.7	14.9	0.1
Thoracic Surgeons	0.0	53.0	35.7	1.6	9.7
Urologists	2.7	15.3	64.5	17.4	0.1
Multi-Specialty Groups	0.4	20.5	61.5	13.3	4.3
Pathologists	25.6	35.6	26.6	5.6	6.7
Radiologists	2.2	47.0	45.3	4.8	0.7
All Physicians ^b	3.0	25.3	53.4	13.8	4.5

^aRows sum to 100 percent.

^bBased on all specialties, not just those shown in table.

Note: All simulations use RCL-neutral conversion factors.

Source: BMAD Provider File, 1986.

TABLE A-8

DISTRIBUTION OF MEDICARE REVENUES BY SIZE OF PRACTICES GAIN (LOSS) IN URBAN AREAS: CHARGE-BASED RVS WITH NO SPECIALTY DIFFERENTIAL^a

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break-Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
GPs/FPs	0.3%	15.6%	44.0%	27.8%	12.3%
Internists	1.0	32.7	54.0	9.5	2.7
Cardiologists	1.7	41.8	50.6	3.2	2.7
Dermatologists	2.4	23.5	31.3	19.8	23.0
Gastroenterologists	3.1	40.7	51.8	3.5	0.9
Pediatricians	8.2	29.1	15.6	38.9	8.3
General Surgeons	0.8	22.6	57.6	16.1	2.9
ENT Surgeons	0.0	12.2	55.2	27.9	4.8
OB-GYNS	0.1	13.6	49.6	29.7	7.0
Ophthalmologists	0.6	18.6	63.3	16.3	1.2
Orthopedic Surgeons	0.4	16.5	66.0	16.0	1.2
Thoracic Surgeons	0.3	40.9	48.5	6.9	3.3
Urologists	0.0	12.8	70.2	14.2	2.8
Multi-Specialty Groups	1.0	18.6	70.1	5.9	4.3
Pathologists	8.4	19.5	37.2	20.6	14.3
Radiologists	2.9	25.3	54.5	11.2	6.1
All Physicians ^b	1.2	26.0	55.6	12.9	4.4

^aRows sum to 100 percent.

^bBased on all specialties, not just those shown in table.

Note: All simulations use RCL-neutral conversion factors.

Source: BMAD Provider File, 1986.

TABLE A-9

DISTRIBUTION OF MEDICARE REVENUES BY SIZE OF PRACTICES GAIN (LOSS) IN RURAL AREAS: CHARGE-BASED RVS WITH SPECIALTY DIFFERENTIAL FOR VISITS ONLY^a

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break-Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
GPs/FPs	6.7%	28.4%	41.7%	19.9%	3.3%
Internists	2.3	21.3	53.8	19.2	3.4
Cardiologists	4.2	23.2	62.3	7.5	3.0
Dermatologists	0.0	19.2	43.1	17.7	20.0
Gastroenterologists	0.0	43.0	51.2	5.8	0.0
Pediatricians	43.5	17.5	11.9	23.0	4.2
General Surgeons	3.5	12.0	59.6	23.1	1.9
ENT Surgeons	0.1	11.2	50.7	34.6	3.4
OB-GYNS	0.2	7.0	41.6	40.6	10.7
Ophthalmologists	0.0	32.4	65.4	2.1	0.0
Orthopedic Surgeons	0.0	11.9	58.0	30.0	0.1
Thoracic Surgeons	0.0	53.0	32.3	4.9	9.8
Urologists	2.7	16.7	65.5	14.9	0.1
Multi-Specialty Groups	0.4	17.2	63.5	13.8	5.2
Pathologists	18.1	42.7	26.9	5.6	6.7
Radiologists	2.2	46.4	44.9	5.8	0.6
All Physicians ^b	2.5	25.3	54.3	14.7	3.2

^aRows sum to 100 percent.

^bBased on all specialties, not just those shown in table.

Note: All simulations use RCL-neutral conversion factors.

Source: BMAD Provider File, 1986.

TABLE A-10

DISTRIBUTION OF MEDICARE REVENUES BY SIZE OF PRACTICES GAIN (LOSS) IN URBAN AREAS: CHARGE-BASED RVS WITH SPECIALTY DIFFERENTIAL FOR VISITS ONLY^a

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break-Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
GPs/FPs	5.5%	40.5%	41.7%	9.3%	3.2%
Internists	0.6	28.8	55.4	11.9	3.3
Cardiologists	1.4	23.6	56.2	16.0	2.9
Dermatologists	4.1	25.6	28.4	19.0	23.0
Gastroenterologists	1.2	35.6	57.6	4.7	0.9
Pediatricians	0.4	25.0	26.5	14.2	33.9
General Surgeons	1.2	26.8	56.7	12.8	2.5
ENT Surgeons	1.3	20.7	57.7	18.8	1.5
OB-GYNS	0.1	14.1	50.6	28.9	6.3
Ophthalmologists	0.6	19.4	63.4	15.9	0.7
Orthopedic Surgeons	0.0	16.9	67.0	15.0	1.1
Thoracic Surgeons	0.9	45.1	43.7	6.9	3.3
Urologists	0.0	25.4	64.1	8.8	1.6
Multi-Specialty Groups	0.5	17.8	69.6	8.1	4.1
Pathologists	8.4	19.7	37.1	20.4	14.4
Radiologists	2.8	25.2	54.7	11.2	6.1
All Physicians ^b	1.4	25.4	56.0	13.2	4.0

^aRows sum to 100 percent.

^bBased on all specialties, not just those shown in table.

Note: All simulations use RCL-neutral conversion factors.

Source: BMAD Provider File, 1986.

TABLE A-11

DISTRIBUTION OF MEDICARE REVENUES BY SIZE OF PRACTICES GAIN (LOSS) IN RURAL AREAS: CHARGE-BASED RVS WITH NO SPECIALTY DIFFERENTIAL^a

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break- Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
GPs/FPs	1.6%	8.9%	34.3%	37.8%	17.4%
Internists	0.7	26.0	49.0	20.5	3.9
Cardiologists	3.4	61.2	28.7	4.3	2.4
Dermatologists	0.0	18.7	36.9	18.7	25.7
Gastroenterologists	0.7	49.8	43.7	5.8	0.0
Pediatricians	0.4	49.6	40.3	5.7	4.0
General Surgeons	0.0	19.1	44.7	31.8	4.5
ENT Surgeons	0.0	9.0	46.4	26.2	18.3
OB-GYNs	0.0	6.3	41.5	39.3	12.9
Ophthalmologists	1.1	35.8	43.7	19.3	0.0
Orthopedic Surgeons	0.0	23.2	54.1	17.4	5.2
Thoracic Surgeons	0.9	50.9	34.6	4.0	9.6
Urologists	0.0	19.0	45.2	35.1	0.8
Multi-Specialty Groups	3.4	34.4	28.0	24.7	9.5
Pathologists	14.9	40.1	25.7	10.8	8.5
Radiologists	1.4	58.2	30.8	7.6	2.1
All Physicians ^b	1.4	30.7	39.3	21.9	6.7

^aRows sum to 100 percent.

^bBased on all specialties, not just those shown in table.

Note: All simulations use GPCI conversion factors.

Source: BMAD Provider File, 1986.

TABLE A-12

DISTRIBUTION OF MEDICARE REVENUES BY SIZE OF PRACTICES GAIN (LOSS) IN URBAN AREAS: CHARGE-BASED RVS WITH NO SPECIALTY DIFFERENTIAL^a

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break- Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
GPs/FPs	3.1%	18.0%	37.8%	25.6%	15.6%
Internists	5.0	34.9	42.8	14.6	2.8
Cardiologists	6.5	48.0	36.1	6.6	2.8
Dermatologists	7.3	25.1	33.4	11.8	22.5
Gastroenterologists	3.4	63.0	27.8	4.7	1.2
Pediatricians	16.5	22.3	21.1	31.6	8.5
General Surgeons	5.1	22.3	46.2	19.4	7.0
ENT Surgeons	0.9	17.7	52.0	21.9	7.5
OB-GYNS	2.9	21.3	41.0	24.1	10.7
Ophthalmologists	2.3	21.0	59.1	15.2	2.5
Orthopedic Surgeons	2.0	27.7	49.5	18.7	2.1
Thoracic Surgeons	10.4	40.3	38.6	6.1	4.7
Urologists	3.2	27.4	47.3	19.3	2.8
Multi-Specialty Groups	1.4	25.8	53.8	14.2	4.7
Pathologists	12.8	26.1	25.1	20.4	15.5
Radiologists	4.0	23.1	47.4	19.9	5.5
All Physicians ^b	4.3	30.0	44.6	15.8	5.3

^aRows sum to 100 percent.

^bBased on all specialties, not just those shown in table.

Note: All simulations use GPCI conversion factors.

Source: BMAD Provider File, 1986.



TABLE A-13

DISTRIBUTION OF MEDICARE REVENUES BY SIZE OF PRACTICES GAIN (LOSS) IN RURAL AREAS: CHARGE-BASED RVS WITH SPECIALTY DIFFERENTIAL FOR VISITS ONLY^a

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break-Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
GPs/FPs	2.5%	30.9%	45.2%	17.4%	4.0%
Internists	0.6	19.9	51.0	23.2	5.3
Cardiologists	2.1	57.3	25.1	11.3	4.1
Dermatologists	0.0	18.2	37.8	18.3	25.7
Gastroenterologists	0.7	42.8	50.7	5.8	0.0
Pediatricians	0.4	49.5	22.2	22.5	5.3
General Surgeons	0.0	20.3	46.3	29.2	4.3
ENT Surgeons	0.0	10.9	49.0	29.1	11.0
OB-GYNS	0.0	8.5	38.7	33.7	19.1
Ophthalmologists	1.1	34.1	45.5	19.4	0.0
Orthopedic Surgeons	0.0	22.2	45.1	27.5	5.2
Thoracic Surgeons	0.9	48.1	37.4	1.1	12.5
Urologists	2.9	20.6	47.4	28.3	0.8
Multi-Specialty Groups	3.4	33.3	27.6	24.3	11.4
Pathologists	14.9	40.1	25.4	11.1	8.5
Radiologists	0.1	58.3	30.9	8.7	2.0
All Physicians ^b	1.4	31.9	41.3	20.0	5.5

^aRows sum to 100 percent.

^bBased on all specialties, not just those shown in table.

Note: All simulations use GPCI conversion factors.

Source: BMAD Provider File, 1986.

TABLE A-14

DISTRIBUTION OF MEDICARE REVENUES BY SIZE OF PRACTICES GAIN (LOSS) IN URBAN AREAS: CHARGE-BASED RVS WITH SPECIALTY DIFFERENTIAL FOR VISITS ONLY^a

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break-Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
GPs/FPs	8.8%	37.5%	37.8%	12.0%	3.9%
Internists	3.8	32.0	42.7	17.8	3.8
Cardiologists	1.9	38.7	44.1	11.0	4.3
Dermatologists	6.5	26.5	34.3	11.6	21.0
Gastroenterologists	1.8	48.4	40.3	6.7	2.9
Pediatricians	16.6	2.8	33.7	18.0	29.0
General Surgeons	5.5	24.1	47.1	17.1	6.3
ENT Surgeons	2.1	31.0	47.4	15.3	4.2
OB-GYNS	3.3	23.5	38.4	23.5	11.4
Ophthalmologists	2.0	20.3	59.8	15.4	2.5
Orthopedic Surgeons	2.0	29.1	48.5	17.6	2.9
Thoracic Surgeons	10.1	33.5	45.7	6.0	4.7
Urologists	4.3	29.7	48.2	15.3	2.5
Multi-Specialty Groups	1.7	24.2	46.4	23.1	4.6
Pathologists	12.8	27.1	24.2	20.3	15.7
Radiologists	4.0	22.9	47.3	19.6	6.2
All Physicians ^b	3.8	28.9	45.5	16.6	5.3

^aRows sum to 100 percent.

^bBased on all specialties, not just those shown in table.

Note: All simulations use GPCI conversion factors.

Source: BMAD Provider File, 1986.

TABLE A-15

PERCENT OF CASELOAD WITH HSIAO WORK VALUES BY SPECIALTY

	<u>PERCENT OF ALLOWED CHARGES WITH HSIAO WORK VALUES</u>		<u>Percent of Physicians with at least 50% of charges covered by Hsiao</u>
	<u>Unweighted</u>	<u>Weighted^a</u>	
GPS/FPs	83.2%	86.0%	93.4%
General Surgeons	77.9	75.7	94.0
Allergists	62.9	55.4	55.0
ENT	90.7	88.0	98.9
Cardiologists ^b	66.3	63.8	71.5
Dermatologists	77.1	72.3	88.3
Gastroenterologists ^b	71.8	70.2	97.3
Internists	87.2	86.0	96.5
Neurologists ^b	69.2	78.9	92.9
Neurosurgeons ^b	64.1	63.9	83.0
OB-GYNS	92.2	91.3	99.1
Ophthalmologists	90.5	90.6	99.7
Orthopedic Surgeons	78.0	75.1	96.8
Pathologists	94.6	98.0	98.4
Plastic Surgeons ^b	40.0	34.5	22.5
Rehab. Medicine ^b	74.1	81.7	91.6
Psychiatrists	23.6	31.8	29.0
Pulmonary Diseases ^b	79.7	82.7	94.7
Radiologists	68.1	63.4	79.5
Thoracic Surgeons	81.0	84.4	97.2
Urologists	90.7	90.5	99.4
Pediatricians	78.6	83.6	90.5
Nephrologists ^b	75.0	62.9	73.4
Multi-Specialty Groups	73.0	78.2	89.5
Unknown	64.7	53.7	49.5
All Physicians	-----	-----	90.6

^aWeighted by total allowed charges in the practice.^bThis specialty was not included in the Hsiao survey.

Source: BMAD provider file, 1986.

TABLE A-16

DISTRIBUTION OF MEDICARE REVENUES BY SIZE OF PRACTICE'S GAIN (LOSS) BY SPECIALTY: RBRVS WITH WORK EFFORT ONLY^a

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break-Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
GP/FPs	1.1%	2.9%	9.7%	21.3%	65.0%
Internists	1.9	8.5	24.3	28.9	36.6
Cardiologists ^b	10.5	15.9	43.2	16.5	13.9
Dermatologists	4.1	19.2	44.8	20.5	11.5
Gastroenterologists ^b	5.5	65.3	24.7	2.5	2.0
Pediatricians	0.5	15.6	23.4	9.3	51.2
General Surgeons	16.1	49.9	21.1	6.8	6.1
ENT Surgeons	2.1	24.4	38.4	25.1	10.0
OBGYNS	8.8	40.1	26.8	11.0	13.3
Ophthalmologists	57.5	39.7	2.2	0.4	0.2
Orthopedic Surgeons	14.2	64.8	17.4	3.1	0.6
Thoracic Surgeons	74.5	20.7	3.6	0.0	1.2
Urologists	0.3	49.8	40.4	8.2	1.3
Multi-Specialty Groups	13.3	34.5	25.5	15.6	11.1
Pathologists	27.0	46.6	16.4	6.5	3.6
Radiologists	35.7	49.7	8.6	1.5	4.5
All Physicians ^c	18.2	28.8	20.2	14.0	18.8

^aRows sum to 100 percent.^bThis specialty was not included in the RBRVS survey.^cBased on those specialties, not just those listed on table.Note: All simulations use a national conversion factor.Source: BMAD provider file, 1986.

TABLE A-17

AVERAGE GAIN (LOSS) AS PERCENT OF CURRENT MEDICARE REVENUES: NATIONAL CONVERSION FACTOR

	CHARGE-BASED RVS		RESOURCE-BASED RVS	
	No Specialty Differential	Specialty Differential for Visits Only	Work Effort Only	Full Model
GP/FPs	15.4%	-0.5%	59.6%	60.2%
Internists	-3.7	-1.3	27.1	25.0
Cardiologists	-9.8	-5.0	2.4	a
Dermatologists	15.3	14.8	6.7	1.7
Gastroenterologists	-15.0	-11.5	-18.5	a
Pediatricians			27.3	23.9
General Surgeons	4.1	2.6	-13.7	-13.3
ENT Surgeons			6.6	13.4
OB/GYN			-2.2	0.0
Ophthalmologists	-1.2	-0.8	-37.8	-36.9
Orthopedic Surgeons	-0.6	-0.3	-20.9	-2.4
Thoracic Surgeons	-0.0	-0.8	-43.7	-45.2
Urologists	0.7	-1.4	-6.8	-3.7
Multi-Specialty Groups	-1.7	-0.8	-6.5	a
Pathologists			-17.3	-36.1
Radiologists	-3.3	-2.7	-27.1	-34.2
All Physicians ^b	0.0	0.0	0.3	0.6

^aThis specialty was not included in the RBRVS survey.

^bBased on all specialties, not just those listed on table.

Note: All simulations use a national conversion factor.

Source: BMAD provider file, 1986.



TABLE A-18

AVERAGE GAIN (LOSS) AS PERCENT OF MEDICARE REVENUES: RBRVS UNDER THE ACTUARY'S ASSUMPTION

	<u>RBRVS With Work Effort Only</u>	<u>Full Model RBRVS</u>
GP/FPs	46.1%	47.4%
Internists	22.7	21.4
Cardiologists ^a	2.6	--
Dermatologists	4.4	0.9
Gastroenterologists ^a	-13.1	--
Pediatricians	28.8	26.4
General Surgeons	-12.7	-11.9
ENT Surgeons	3.0	9.3
OB-GYNS	-1.2	1.3
Ophthalmologists	-31.0	-29.9
Orthopedic Surgeons	-17.6	-3.2
Thoracic Surgeons	-35.7	-36.8
Urologists	-7.7	-4.8
Multi-Specialty Groups	-4.0	--
Pathologists	-15.8	-30.5
Radiologists	-22.0	-27.3
All Physicians ^b	0.2	-0.6

^aThis specialty was not included in the RBRVS survey.

^bBased on all specialties, not just those listed on table.

Note: All simulations use a GPCI conversion factor.

Source: BMAD provider file, 1986.



TABLE A-19

DISTRIBUTION OF MEDICARE REVENUES BY SIZE OF PRACTICE'S GAIN (LOSS) BY SPECIALTY: FULL MODEL RBRVS UNDER THE ACTUARY'S ASSUMPTION^a

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break- Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
GP/FPs	1.0%	2.9%	8.9%	21.0%	66.2%
Internists	1.9	8.6	25.3	29.8	34.3
Dermatologists	4.5	26.9	40.9	18.7	9.0
Pediatricians	0.5	16.5	22.8	9.9	50.4
General Surgeons	14.6	49.6	22.1	7.6	6.2
ENT Surgeons	0.0	19.9	38.9	24.5	16.7
OB-GYNs	6.8	35.8	31.4	10.8	15.2
Ophthalmologists	55.1	41.3	3.0	0.4	0.3
Orthopedic Surgeons	2.4	36.3	44.0	11.8	5.6
Thoracic Surgeons	76.3	19.6	2.9	0.0	1.2
Urologists	0.0	41.3	46.5	10.1	1.8
Pathologists	56.5	33.4	7.0	0.1	2.9
Radiologists	46.0	45.3	3.6	1.9	3.2
All Physicians ^b	21.4	27.8	18.1	13.5	19.2

^aRows sum to 100 percent.

^bBased on all specialties included in the RBRVS survey, not just those listed on table.

Note: All simulations use a GPCI conversion factor.

Source: BMAD provider file, 1986.

TABLE A-20

AVERAGE GAIN (LOSS) AS PERCENT OF CURRENT MEDICARE REVENUES: RBRVS BASED ON WORK EFFORT ALONE^a

	<u>All Locations</u>	<u>Urban</u>	<u>Rural</u>
GPs/FPs	54.4%	52.5%	57.5%
Internists	29.0	28.5	30.8
Cardiologists	6.0	6.5	3.8
Dermatologists	8.2	7.8	9.4
Gastroenterologists	-14.2	-13.6	-19.2
Pediatricians	35.2	38.1	21.7
General Surgeons	-14.2	-15.5	-10.8
ENT Surgeons	6.6	6.3	7.6
OB-GYNS	0.1	-0.7	2.6
Ophthalmologists	-38.0	-37.2	-40.4
Orthopedic Surgeons	-20.3	-20.3	-20.0
Thoracic Surgeons	-43.0	-48.2	-19.2
Urologists	-6.6	-7.0	-5.5
Multi-Specialty Groups	-3.2	-4.9	2.3
Pathologists	-18.4	-14.6	-24.6
Radiologists	-26.3	-24.2	-31.8
All Physicians ^b	1.2	0.7	2.9

^aMeans are weighted by the practice's total allowed charges.

^bBased on all specialties not just those on table.

Note: All simulations use a GPCI conversion factor.

Source: BMAD provider file, 1986.

TABLE A-21

AVERAGE GAIN (LOSS) AS PERCENT OF CURRENT MEDICARE REVENUES: FULL MODEL
 RBRVSA^a

	<u>All Locations</u>	<u>Urban</u>	<u>Rural</u>
GPs/FPs	54.4%	52.5%	57.5
Internists	26.4	25.9	28.2
Dermatologists	2.8	2.4	4.0
Pediatricians	31.1	34.0	18.1
General Surgeons	-14.1	-15.4	-10.8
ENT Surgeons	13.0	12.6	14.1
OB-GYNS	2.1	1.3	4.7
Ophthalmologists	-37.4	-36.5	-39.8
Orthopedic Surgeons	-1.9	-2.0	-1.6
Thoracic Surgeons	-44.7	-49.8	-21.6
Urologists	-3.8	-4.2	-2.7
Pathologists	-37.2	-34.2	-41.9
Radiologists	-33.7	-31.8	-38.6
All Physicians ^b	-1.0	-1.9	1.7

^aMeans are weighted by the practice's total allowed charges.

^bBased on all specialties not just those on table.

Note: Simulations are based on GPCI conversion factors.

Source: BMAD provider file, 1986.

TABLE A-22

DISTRIBUTION OF MEDICARE REVENUES BY SIZE OF PRACTICE'S GAIN (LOSS) BY SPECIALTY: FULL MODEL RESOURCE-BASED RVSA^a

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break- Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
GP/FPs	1.9%	2.1%	6.0%	16.6%	73.6%
Internists	4.1	6.4	18.7	27.8	43.0
Dermatologists	5.7	25.7	35.8	21.1	11.7
Pediatricians	6.3	10.7	21.2	7.4	54.4
General Surgeons	32.8	31.5	19.8	8.7	7.3
ENT Surgeons	2.1	17.9	32.2	21.3	26.5
OB-GYNs	14.1	28.5	27.0	12.5	18.0
Ophthalmologists	77.0	19.4	2.8	0.6	0.3
Orthopedic Surgeons	6.1	32.5	38.9	14.3	8.2
Thoracic Surgeons	88.3	7.6	2.3	0.6	1.2
Urologists	3.2	38.4	39.7	13.5	5.2
Pathologists	73.6	16.4	6.5	0.6	2.9
Radiologists	67.6	23.7	3.4	1.5	3.8
All Physicians ^b	31.9	17.4	14.8	12.9	23.1

^aRows sum to 100 percent. Practices have been weighted by total allowed charges.

^bBased on all specialties included in the Hsiao survey not just those listed on table.

Note: All simulations use a GPCI conversion factor.

Source: BMAD provider file, 1986.

TABLE A-23

AVERAGE GAIN (LOSS) AS PERCENT OF CURRENT MEDICARE REVENUES: RBRVS WITH ADDITIVE MODEL FOR FULL PRACTICE COSTS^a

	<u>All Locations</u>	<u>Urban</u>	<u>Rural</u>
GPs/FPs	28.2%	26.8%	30.6%
Internists	13.9	13.5	15.5
Dermatologists	2.4	2.0	3.7
Pediatricians	16.4	18.9	5.0
General Surgeons	-7.3	-8.8	-3.3
ENT Surgeons	5.7	5.4	7.0
OB-GYNS	1.8	0.9	4.6
Ophthalmologists	-18.5	-17.6	-21.0
Orthopedic Surgeons	-0.3	-0.6	0.5
Thoracic Surgeons	-22.9	-29.9	8.9
Urologists	-1.7	-2.1	-0.3
Pathologists	-24.7	-21.2	-30.4
Radiologists	-14.7	-12.3	-20.7
All Physicians ^b	0.0	-0.6	2.0

^aMeans are weighted by the practice's total allowed charges.

^bBased on all specialties not just those on table.

Note: All simulations use a GPCI conversion factor.

Source: BMAD provider file, 1986.

TABLE A-24

AVERAGE GAIN (LOSS) AS PERCENT OF CURRENT MEDICARE REVENUES: RBRVS WITH ADDITIVE GMEI^a

	<u>All Locations</u>	<u>Urban</u>	<u>Rural</u>
GPs/FPs	31.4%	23.7%	44.2%
Internists	12.9	9.9	24.9
Dermatologists	1.7	-1.9	13.4
Pediatricians	12.9	14.6	5.2
General Surgeons	-7.0	-11.2	4.1
ENT Surgeons	6.2	3.4	16.7
OB-GYNS	0.6	-2.7	11.1
Ophthalmologists	-18.3	-19.1	-15.8
Orthopedic Surgeons	-0.6	2.8	6.1
Thoracic Surgeons	-23.3	-30.9	11.4
Urologists	-1.7	-4.9	7.2
Pathologists	-24.4	-23.2	-26.3
Radiologists	-15.3	-15.0	-16.1
All Physicians ^b	0.1	-3.3	10.0

^aMeans are weighted by the practice's total allowed charges.

^bBased on all specialties not just those on table.

Note: All simulations use a GPCI conversion factor.

Source: BMAD provider file, 1986.

TABLE A-25

AVERAGE GAIN (LOSS) AS PERCENT OF CURRENT MEDICARE REVENUES: RBRVS WITH ADDITIVE MODEL FOR TOTAL PRACTICE COSTS AND WITH NO GEOGRAPHIC ADJUSTMENT^a

	<u>All Locations</u>	<u>Urban</u>	<u>Rural</u>
GPs/FPs	32.4%	22.1%	49.6%
Internists	12.0	7.6	29.6
Dermatologists	0.8	-4.8	19.3
Pediatricians	9.4	10.3	5.6
General Surgeons	-7.1	-13.5	9.6
ENT Surgeons	5.4	0.9	22.4
OB-GYNS	-0.9	-5.8	14.9
Ophthalmologists	-18.6	-21.3	-10.4
Orthopedic Surgeons	-1.4	-5.7	12.1
Thoracic Surgeons	-24.1	-33.0	16.1
Urologists	-2.2	-7.5	12.8
Pathologists	-23.9	-23.8	-23.9
Radiologists	-15.7	-17.4	-11.4
All Physicians ^b	-0.3	-5.6	15.1

^aMeans are weighted by the practice's total allowed charges.

^bBased on all specialties not just those on table.

Source: BMAD provider file, 1986.

TABLE A-26

DISTRIBUTION OF MEDICARE REVENUES BY SIZE OF PRACTICE'S GAIN (LOSS) BY SPECIALTY: RBRVS WITH ADDITIVE GPCI FOR TOTAL PRACTICE COST^a

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break-Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
GPs/FPs	3.4%	6.1%	19.3%	26.5%	44.7%
Internists	6.2	12.5	25.7	29.6	26.0
Dermatologists	7.3	24.1	36.7	20.4	11.6
Pediatricians	8.1	29.3	7.1	7.0	48.6
General Surgeons	22.4	33.2	21.1	12.7	10.6
ENT Surgeons	8.4	16.8	36.0	26.1	12.8
OB-GYNS	14.1	29.2	26.6	12.2	17.9
Ophthalmologists	23.0	53.2	17.8	4.4	1.5
Orthopedic Surgeons	4.2	31.4	39.8	15.6	9.0
Thoracic Surgeons	59.7	23.5	10.8	2.3	3.7
Urologists	2.1	34.3	42.5	15.4	5.7
Pathologists	52.7	27.2	10.5	6.1	3.6
Radiologists	28.0	38.8	22.4	4.0	6.8
All Physicians ^b	15.8	28.0	23.9	16.3	16.1

^aRows sum to 100 percent. Practices have been weighted by total allowed charges.

^bBased on all specialties included in the RBRVS survey.

Note: All simulations use GPCI conversion factor.

Source: BMAD provider file, 1986.

TABLE A-27

DISTRIBUTION OF MEDICARE REVENUES BY SIZE OF PRACTICE'S GAIN (LOSS) BY SPECIALTY: RBRVS WITH ADDITIVE GPCI FOR OVERHEAD COSTS ONLY^a

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break-Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
GPs/FPs	3.3%	7.3%	18.1%	22.2%	49.1%
Internists	6.9	11.9	29.3	26.3	25.6
Dermatologists	11.0	25.3	30.8	20.7	12.3
Pediatricians	8.1	28.7	9.4	15.4	38.5
General Surgeons	22.6	33.7	20.6	11.7	11.3
ENT Surgeons	9.7	17.5	31.5	23.3	18.0
OB-GYNS	13.7	33.1	24.9	12.3	16.1
Ophthalmologists	23.3	51.4	19.7	4.2	1.5
Orthopedic Surgeons	5.5	29.8	36.8	19.2	8.7
Thoracic Surgeons	58.0	23.6	12.3	2.6	3.5
Urologists	4.5	26.3	47.2	14.9	7.1
Pathologists	50.9	36.6	2.3	5.1	5.2
Radiologists	27.9	43.6	18.0	4.3	6.2
All Physicians ^b	16.3	27.9	24.2	15.0	16.7

^aRows sum to 100 percent. Practices have been weighted by total allowed charges.

^bBased on all specialties included in the RBRVS survey.

Note: All simulations use GPCI conversion factor.

Source: BMAD provider file, 1986.

TABLE A-28

DISTRIBUTION OF MEDICARE REVENUES BY SIZE OF PRACTICE'S GAIN (LOSS) BY SPECIALTY: RBRVS WITH ADDITIVE GPCI FOR TOTAL PRACTICE COST AND WITH NO GEOGRAPHIC ADJUSTMENT^a

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break- Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
GPs/FPs	3.3%	9.8%	16.9%	20.4%	49.6%
Internists	8.1	13.1	29.6	23.0	26.2
Dermatologists	15.6	25.2	23.5	21.9	13.8
Pediatricians	15.5	23.5	7.2	20.9	32.9
General Surgeons	23.4	32.0	21.0	11.8	11.8
ENT Surgeons	12.0	17.3	29.0	21.8	19.9
OB-GYNS	16.5	32.2	23.5	13.4	14.4
Ophthalmologists	25.8	47.2	21.5	4.0	1.5
Orthopedic Surgeons	11.7	25.8	33.4	18.8	10.4
Thoracic Surgeons	58.3	23.9	11.4	2.8	3.6
Urologists	12.8	25.0	37.7	15.7	8.8
Pathologists	51.0	35.0	3.7	4.7	5.6
Radiologists	25.7	47.4	17.2	3.7	6.0
All Physicians ^b	17.9	27.6	23.6	13.9	17.1

^aRows sum to 100 percent. Practices have been weighted by total allowed charges.

^bBased on all specialties included in the RBRVS survey.

Note: All simulations use GPCI conversion factor.

Source: BMAD provider file, 1986.

TABLE A-29

DISTRIBUTION OF GAINS (LOSSES) BY CARRIER: RBRVS WITH ADDITIVE MODEL FOR FULL PRACTICE COSTS^a

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break- Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
Alabama	8.9%	31.8%	19.2%	20.8%	19.3%
Alaska ^b	6.3	13.4	53.9	26.4	0.0
Arizona	14.6	16.7	40.9	20.2	7.7
Arkansas	36.0	21.2	21.8	16.1	4.8
California - north	10.4	22.4	39.2	22.4	5.6
- south	17.7	34.1	27.5	12.9	7.8
Colorado	2.7	16.9	24.0	23.9	32.5
Connecticut	8.3	30.2	30.3	19.5	11.7
Delaware	11.1	8.5	13.1	57.4	10.0
District of Columbia	24.7	18.7	9.4	29.2	18.1
Florida	10.0	37.6	32.8	13.8	5.8
Georgia	15.7	26.7	24.4	17.1	16.1
Hawaii ^b	0.1	46.6	42.4	7.3	3.6
Idaho	1.4	15.4	39.7	31.4	12.2
Illinois	8.0	24.8	19.2	17.0	31.0
Indiana	2.9	28.5	20.8	18.7	29.2
Iowa	5.7	44.4	17.1	9.7	23.2
Kansas - Kansas City	22.0	36.5	16.5	15.1	9.9
- rest of state	2.3	40.9	33.0	19.0	4.8
Kentucky	23.7	20.7	24.0	18.6	13.0
Louisiana	30.8	24.6	13.9	16.5	14.2
Maine	3.2	49.5	16.6	19.5	11.1
Maryland	9.0	24.8	13.8	25.6	26.7
Massachusetts	4.7	32.6	36.0	13.0	13.8
Michigan	4.9	23.4	23.2	17.6	30.9
Minnesota - urban	0.6	11.2	28.5	37.4	22.4
- rural ^b	16.8	12.9	22.9	23.8	23.6
Mississippi	15.3	32.7	11.7	11.2	29.1
Missouri (excluding K.C.)	3.4	17.8	28.6	20.8	29.5
Montana	36.2	24.9	31.7	5.3	1.9
Nebraska	15.5	6.4	24.7	28.8	24.6
Nevada	37.7	32.7	11.9	16.0	1.7
New Hampshire/Vermont	0.1	21.2	18.5	26.5	33.8
New Jersey	11.3	21.8	28.9	19.9	18.1

TABLE A-29 (continued)

DISTRIBUTION OF GAINS (LOSSES) BY CARRIER: RBRVS WITH ADDITIVE MODEL FOR FULL PRACTICE COSTS^a

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break-Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
New Mexico	17.3	24.0	26.6	26.4	5.7
New York - downstate	34.9	32.4	13.3	9.5	9.9
- upstate	3.3	6.9	30.0	20.0	39.9
- Queens	28.8	16.4	22.6	21.0	11.3
North Carolina	23.4	25.9	23.1	14.4	13.2
North Dakota/South Dakota	50.4	24.2	10.8	4.2	10.5
Ohio	10.1	45.1	12.9	10.6	21.3
Oklahoma	23.3	38.3	22.1	10.9	5.5
Oregon	0.5	12.6	48.1	26.4	12.4
Pennsylvania	13.4	13.3	31.6	19.8	21.9
Rhode Island	4.6	49.5	21.7	15.7	8.6
South Carolina	15.4	23.7	19.8	23.0	18.1
South Dakota (see North Dakota)					
Tennessee	20.2	36.5	13.4	8.3	21.7
Texas	28.6	26.1	20.8	13.1	11.3
Utah	2.8	60.3	9.9	16.1	11.0
Vermont (see New Hampshire)					
Virginia	3.0	20.8	15.2	23.8	37.3
Washington	2.2	32.3	34.1	20.4	11.1
West Virginia	37.1	15.6	18.3	10.5	18.5
Wisconsin	0.3	24.9	30.1	28.2	16.5
Wyoming ^b	6.1	0.0	43.4	8.2	42.3
ALL	15.8	28.0	23.9	16.3	16.1

^aRows sum to 100 percent. Practices have been weighted by total allowed charges.

^bSampled providers generated less than \$1 million in Medicare allowed charges.

Note: All simulations use a GPCI conversion factor.

Source: BMAD provider file, 1986.

TABLE A-30

DISTRIBUTION OF GAINS (LOSSES) BY CARRIER: RBRVS WITH ADDITIVE MODEL FOR
OVERHEAD COSTS ONLY

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break- Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
Alabama	3.4%	32.6%	15.3%	22.4%	26.3%
Alaska ^b	17.7	55.9	26.3	0.0	0.0
Arizona	13.9	21.3	37.8	17.5	9.6
Arkansas	17.8	25.1	18.4	16.9	21.7
California - north	13.8	36.4	34.8	12.4	2.7
- south	29.6	37.8	22.5	7.9	2.2
Colorado	2.7	16.9	24.0	23.9	32.5
Connecticut	10.6	28.7	32.6	18.1	10.1
Delaware	11.5	9.0	33.7	41.0	4.8
District of Columbia	32.0	15.5	32.4	14.7	5.5
Florida	9.8	31.9	32.7	15.8	9.9
Georgia	11.5	23.4	19.6	19.5	26.1
Hawaii ^b	0.1	57.9	31.4	7.7	2.8
Idaho	1.4	13.1	27.3	31.3	26.9
Illinois	7.5	25.7	18.3	18.4	30.3
Indiana	2.9	26.0	19.2	20.7	31.3
Iowa	3.4	4.1	53.3	12.2	27.1
Kansas - Kansas City	21.7	36.8	11.2	14.8	15.6
- rest of state	2.1	9.9	50.4	14.9	22.8
Kentucky	23.0	16.0	24.2	21.5	15.3
Louisiana	28.1	26.8	9.1	16.4	19.6
Maine	0.0	10.6	48.0	5.2	36.2
Maryland	10.8	27.8	18.0	25.7	17.6
Massachusetts	4.1	33.1	33.6	14.1	15.1
Michigan	12.8	24.0	26.1	16.8	20.3
Minnesota - urban	0.9	14.2	27.1	38.1	19.7
- rural ^b	0.0	16.8	34.1	11.7	37.4
Mississippi	2.9	40.1	12.1	9.9	35.1
Missouri (excluding K.C.)	3.4	16.1	29.4	17.0	34.2
Montana	31.1	18.2	29.0	18.3	3.5
Nebraska	12.4	8.3	18.6	31.5	29.2
Nevada	49.3	18.0	27.0	3.8	1.8
New Hampshire/Vermont	0.1	2.5	26.9	23.1	47.4
New Jersey	12.6	27.4	31.0	15.2	13.8

TABLE A-30 (continued)

DISTRIBUTION OF GAINS (LOSSES) BY CARRIER: RBRVS WITH ADDITIVE MODEL FOR OVERHEAD COSTS ONLY

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break- Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
New Mexico	6.4	31.8	23.8	16.1	21.8
New York - downstate	43.2	28.5	14.7	6.6	7.1
- upstate	3.7	10.6	29.8	20.8	35.1
- Queens	31.6	21.9	20.8	17.5	8.2
North Carolina	9.1	27.5	30.4	13.9	19.2
North Dakota/South Dakota	49.7	1.7	25.6	6.4	16.6
Ohio	9.1	45.0	14.9	8.4	22.6
Oklahoma	23.1	23.5	27.9	14.7	10.7
Oregon	0.5	6.3	51.9	26.3	15.1
Pennsylvania	9.7	23.5	26.5	18.9	21.4
Rhode Island	4.6	49.5	21.7	17.1	7.1
South Carolina	13.6	7.7	24.8	21.2	32.6
South Dakota (see North Dakota)					
Tennessee	14.8	39.6	7.5	14.4	23.7
Texas	23.0	25.5	20.6	15.4	15.5
Utah	2.8	59.9	10.3	14.6	12.5
Vermont (see New Hampshire)					
Virginia	2.8	13.5	17.1	28.4	38.1
Washington	3.4	33.2	40.0	17.5	5.9
West Virginia	36.9	13.8	13.7	11.7	23.9
Wisconsin	0.3	20.8	33.4	21.7	23.9
Wyoming ^b	6.1	10.6	32.8	8.2	42.3
ALL	16.3	27.9	24.2	15.0	16.7

aRows sum to 100 percent. Practices have been weighted by total allowed charges.

bSampled providers generated less than \$1 million in Medicare allowed charges.

Note: All simulations use a GPCI conversion factor.

Source: BMAD provider file, 1986.

TABLE A-31

DISTRIBUTION OF GAINS (LOSSES) BY CARRIER: RBRVS WITH ADDITIVE MODEL FOR FULL PRACTICE COSTS AND WITH NO GEOGRAPHIC ADJUSTMENT

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break- Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
Alabama	2.3%	22.0%	23.6%	23.7%	28.4%
Alaska ^b	34.2	65.8	0.0	0.0	0.0
Arizona	15.2	22.0	39.0	15.4	8.4
Arkansas	5.5	30.5	10.4	24.1	29.5
California - north	17.8	43.2	31.2	5.6	2.1
- south	45.3	34.1	16.4	2.9	1.3
Colorado	2.7	12.6	28.1	23.5	33.2
Connecticut	12.5	27.8	33.5	16.2	10.1
Delaware	11.1	9.4	33.7	40.1	5.7
District of Columbia	37.5	16.7	32.2	8.6	5.0
Florida	10.3	32.2	31.9	15.6	10.1
Georgia	10.6	19.3	21.6	16.9	31.5
Hawaii ^b	5.7	73.1	10.6	7.7	2.8
Idaho	0.9	4.1	36.5	21.5	37.0
Illinois	12.7	21.9	21.4	17.1	27.0
Indiana	1.7	24.2	19.6	16.9	37.6
Iowa	3.4	3.9	46.6	17.4	28.8
Kansas - Kansas City	4.5	52.7	12.3	14.7	15.9
- rest of state	0.2	10.8	42.9	22.1	24.0
Kentucky	20.1	13.1	26.1	19.9	20.8
Louisiana	26.6	27.2	8.7	15.4	22.1
Maine	0.0	3.0	49.7	10.2	37.1
Maryland	10.8	27.8	26.3	17.3	17.8
Massachusetts	5.2	39.2	31.5	12.2	11.9
Michigan	14.4	26.4	24.6	16.2	18.3
Minnesota - urban	0.9	14.2	28.6	36.6	19.7
- rural ^b	0.0	16.8	21.8	14.0	47.4
Mississippi	2.5	37.0	10.2	11.4	39.0
Missouri (excluding K.C.)	3.3	15.2	28.5	17.6	35.4
Montana	29.9	12.0	31.7	22.2	4.3
Nebraska	8.6	11.8	16.1	22.9	40.6
Nevada	52.1	16.6	26.8	2.6	1.8
New Hampshire/Vermont	0.1	0.1	27.1	20.9	51.8
New Jersey	16.9	29.0	30.9	12.0	11.3

TABLE A-31 (continued)

DISTRIBUTION OF GAINS (LOSSES) BY CARRIER: RBRVS WITH ADDITIVE MODEL FOR FULL PRACTICE COSTS AND WITH NO GEOGRAPHIC ADJUSTMENT

	<u>Big Losers</u>	<u>Small Losers</u>	<u>Break- Even</u>	<u>Small Winners</u>	<u>Big Winners</u>
New Mexico	6.4	30.7	25.0	6.3	31.6
New York - downstate	54.7	22.9	12.3	6.2	3.9
- upstate	4.2	12.5	28.3	26.1	28.8
- Queens	41.5	16.9	29.7	6.2	5.7
North Carolina	5.5	29.7	26.5	14.7	23.7
North Dakota/South Dakota	30.7	19.8	19.4	13.5	16.6
Ohio	8.2	43.6	16.4	8.4	23.5
Oklahoma	18.6	26.8	23.7	17.5	13.4
Oregon	0.5	6.3	51.9	27.8	13.6
Pennsylvania	9.7	23.3	27.0	17.5	22.5
Rhode Island	4.4	23.1	48.3	14.9	9.4
South Carolina	0.1	17.0	22.5	19.3	41.2
South Dakota (see North Dakota)					
Tennessee	8.9	43.3	7.8	12.6	27.5
Texas	16.0	27.1	21.6	16.7	18.6
Utah	2.8	59.7	8.6	15.2	13.7
Vermont (see New Hampshire)					
Virginia	2.5	9.3	16.0	31.4	40.8
Washington	4.2	33.8	39.3	17.1	5.6
West Virginia	5.2	42.4	5.6	19.0	27.8
Wisconsin	0.3	17.2	35.4	19.1	28.1
Wyoming ^b	6.1	0.0	40.9	9.1	43.9
ALL	17.9	27.6	23.6	13.9	17.1

^aRows sum to 100 percent. Practices have been weighted by total allowed charges.

^bSampled providers generated less than \$1 million in Medicare allowed charges.

Note: All simulations use a national conversion factor.

Source: BMAD provider file, 1986.

Osc O.

459

MAY 30 1990

REPORT DOCUMENTATION PAGE		1. REPORT NO.	2.	3. Recipient's Accession No.
4. Title and Subtitle Impact of Alternative Medicare Fee Schedules on Physicians.				PB 90-225055/AS
7. Author(s) Janet B. Mitchell, PH.d		8. Report Date October 1989		
9. Performing Organization Name and Address Center for Health Economics Research 75 Second Avenue, Suite 100 Needham, MA 02194		10. Project/Task/Work Unit No. ORD/OR		11. Contract(C) or Grant(G) No. 17-C-98999/1 (G)
12. Sponsoring Organization Name and Address Health Care Financing Administration Office of Research 6325 Security Boulevard Baltimore, Maryland 21207		13. Type of Report & Period Covered Final		14.
15. Supplementary Notes				
16. Abstract (Limit: 200 words) This report examines the independent effects on Medicare physician reimbursement of the resource based relative value scale and the conversion factor adjusted for geographic practice cost differences. Four different types of fee schedules are simulated: two different relative value scales, one charge-based and the other resource-based; each, with two different kinds of conversion scales, one budget neutral at the reasonable charge locality level and the other based on the Geographic Practice Cost Index. The primary data base for the simulations was the 1986 BMAD provider file, a five percent sample of all Medicare Part B claims submitted by providers.				
<i>Part B Medicare Annual Data (Procedure File)</i>				
17. Document Analysis a. Descriptors Medicare Physician Reimbursement-Indepent effect of relative value scale and conversion factor.				
b. Identifiers/Open-Ended Terms Medicare Fee Schedule. Medicare physician reimbursement. Geographic practice cost differences. Medical relative value scale				
c. COSATI Field/Group				
18. Availability Statement NTIS release unlimited		19. Security Class (This Report) Unclassified	21. No. of Pages 65	
		20. Security Class (This Page) Unclassified	22. Price \$17.00	



CMS LIBRARY



3 8095 00014065 3